



# Acarology Bulletin



Newsletter of the **SYSTEMATIC & APPLIED ACAROLOGY SOCIETY**

## Election of SAAS Officers

Since voting tickets were sent out in April 1996, 56 members have sent in their choices of SAAS officers. The numbers of votes for each candidates are: the President, Zhi-Qiang Zhang 54, Lairong Liang 2; the Secretary Xiaoyue Hong 39, Ting-Kui Qin 5; the Treasurer Ting-Kui Qin 37, Xiaoyue Hong 5; members of the executive committee Lairong Liang 53, Y.S. Chow 33, Chengfeng Mo 31, Zhimo Zhao 30, Long-Shu Li 29, Renjie Hu 28, Huifu Wang 27, Uri Gerson 26, Daocho Jin 24, Weinan Wu 21, Chengye Hu 8 and Ting-Huan Wen 4.

□ As a result of this, Zhi-Qiang Zhang is the President, Xiaoyue Hong is the Secretary, Ting-Kui Qin is the Treasurer, Lairong Liang, Y.S. Chow, Chengfeng Mo, Zhimo Zhao, Lung-Shu Li and Renjie Hu are members of the Executive Committee of the SAAS.

□ From 1 August 1996, the elected officers and executive committee members will take over the duty of the Society from the Organizing Committee.

□ [The voting tickets were counted by Prof. Lairong Liang and Dr. Ting-Kui Qin.]

□



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

- 21 Election of SAAS officers
- 21 SAAS emblem
- 22 Acarology and member news
- 23 Research briefs
- 23 New books
- 24 Book reviews
- 27 Acarology information sources
- 28 Contents of Syst. Appl. Acarol.
- 29 Contents of Internal. J. Acarol
- 29 Contents of Acarologia
- 30 Contents of Exp. & Appl. Acarol.
- 31 Contents of J. Acarol. Soc. Japan
- 31 New members of SAAS
- 31 Acknowledgement
- 31 Change of address
- 32 Application form for SAAS
- 32 About the *Acarology Bulletin*

## **Acarology Bulletin Editors**

Editor:

Dr. Zhi-Qiang Zhang (UK)

Assistant editors:

Dr. Xiaoyue Hong (China)

Dr. Renjie Hu (USA)

Dr. Ting-Kui Qin (New Zealand)

### SAAS Officers & Executive Committee

President□	Zhi-Qiang Zhang (UK)
Secretary□	Xiaoyue Hong (China)
Treasurer	Ting-Kui Qin (New Zealand)
Executive Committee Members	Lairong Liang (China)
	Y. S. Chow (Taiwan)
	Chengfeng Mo (Hong Kong)
	Zhimo Zhao (China)
	Long-Shu Li (China)
	Renjie Hu (USA)

## Acarology and member news

**Tick WWW page:** Dr. Renjie Hu wrote that he and his colleagues recently created a World Wide Web page about ticks on the Internet at the Tick Research Laboratory, University of Rhode Island. The web page provides information on several important tick species with pictures and tick-borne diseases including Lyme disease, babesiosis, and ehrlichiosis. You may visit the page using the address: <http://www.uri.edu/artsci/zool/ticklab/>

For further information: Tick Research Laboratory, Department of Biological Sciences, University of Rhode Island, 100 Flagg Road, Kingston, RI 02881, USA. Fax: 401 874-4256; Tel: 401 874-2650

**The 4th International Conference on Pests in Agriculture** will be held in Montpellier, France 6-7-8 January 1997, hosted by the Association Nationale de Protection des Plantes, with the help of IOBC and Agropolis International. The meeting will take place in Le Corum, in the Great Congress Hall of Montpellier.

The Provisional Programme consists of plenary sessions and specialised sessions. There is a special session on Mites. Other sessions are: Predators, parasitoids, entomopathogens & biological control; Semiochemicals; Host plant resistance to pests; Non-target effects of agrochemicals; Resistance of pests and natural enemies to agrochemicals; Environmental considerations in pest control; Sustainable development; Nematodes; Sucking insects and vectors of plant diseases; Lepidoptera; Soil pests, soil and seed treatments; Field crops; Perennial crops; Forests and ornamental trees and shrubs, woody nurseries; Vegetable and ornamental crop; Tropical crops; Integrated pest management, evaluation; Biotechnology, genetic engineering; Stored products; Vertebrates (rodents, birds); Perfume, medicinal and aromatic crops.

Deadline for paper submission is July 15, 1996. For all information : ANPP, 6, Boulevard de la Bastille, f75012 PARIS. tel : 00 33 1 43 44 89 64 fax : 00 33 1 43 44 29 19

**The Acarological Society of Japan** was founded in January 1992, when it replaced the Japanese Association for Acarology, which was originally organized in 1973. The Society currently holds over 200 members in Japan.

The Society publishes a research journal, *Journal of Acarological Society of Japan*, semiannually. The Journal covers all areas of acarology. Reviews and notes as well as original papers are accepted. Members of the Society have the right to submit their manuscripts to the Journal, and non-members can be coauthors. The annual membership fee is ¥ 5,000.

Anyone interested in joining the Society should contact Dr. Y. Chinzei (Secretary of ASJ; Dept. of Medical Zoology, School of Medicine, Mie University, Tsu, Mie 514, Japan; chinzei@doc.medic.mie-u.ac.jp), Dr. A. Takafuji (takafuji@kais.kyoto-u.ac.jp) or Dr. T. Gotoh (gotoh@agr.ibaraki.ac.jp) for more information and application procedures.

**Systematic and Applied Acarology :** Many authors in China wrote that it is difficult and expensive to mail electronic version of their manuscripts to UK. An alternative is to submit electronic manuscript via e-mail. This may be sent to the Editor-in-chief Dr. Zhi-Qiang Zhang at Z.Zhang@nhm.ac.uk. For those who do not have access to e-mail, disks may be sent to Assistant Editor Dr. Xiaoyue Hong at the Department of Plant Protection, Nanjing Agricultural University, Nanjing, Jiangsu 210095. Dr. Hong can then forward the manuscript to Dr. Zhang via e-mail.

**International Journal of Acarology:** From 1996, IJA will not levy page charges for authors who do not have grants for these charges.

**Xiaoyue HONG** successfully completed one year's post-doctoral work as a Darwin Fellow at the International Institute of Entomology, London. He is now at Nanjing Agricultural University in China.

**Fengying Guo:** A Ph.D. student of Plant Protection, Southwest Agricultural University (SWAU), Chongqing, China. M.Sc. degree from SWAU under the supervision of Prof. Zhimo Zhao in 1996, studying the development and biochemical mechanisms of the carmine spider mite (*Tetranychus cinnabarinus*) resistance to pesticide. I am currently studying population ecology of pesticide resistance of carmine spider mite. I am interested in population and molecular genetics of pesticide resistance in spider mites.

### Briefs of news and research from China

**Oribatida:** The genus *Costeremus* (Oribatida: Damaeolidae) was reported by Prof. Huifu Wang for the first time from China, as well as from the outside area of Japan (Wang, H.-F. 1996. Acta Entomologica Sinica, 39: 94-98). The genus was established by Aoki (1970) and includes three species *Costeremus ornata* Aoki (type species), *C. yezoensis* Fujikawa & Fujita (1985) and *C. cornutus* Wang (1996).

**Parasitic mites:** More than 100 species of parasitic mites (including the trombiculid and gamasid mites) belonging to 33 genera and 10 families have been found in Qinghai Province, Northwest China by Weisheng ZHANG, Mingli LI and Xizheng YANG (Entomological Knowledge, 1996, 33: 105-107). Four zoogeographical infra-regions, e. g. He-Huang valley infra-region, Qaidam basin infra-region, Qilian-qingnan infra-region and Qingtan Plateau infra-region, were divided.

**Eastern Equine Encephalomyelitis Virus (EEE),** isolated from *Ixodes persulcatus*, has been reported from Bole Area, Xinjiang Uygur Autonomous Region for the first time in mainland China in 1990's.

***Aculus schlechtendali*** (Nalepa) is a new pest on apples in Sichuan, China. The injury by this mite is more serious under the conditions of moderate temperature, low humidity and less rain. The predatory mites are dominant natural enemies against this mite.

Submitted by Xiaoyue HONG

### NEW BOOKS

┌ └ ┌ ┌ ┌ ┌ ┌ └

**The mite management manual: a practical guide to integrated mite control in apples.** (1995) Orange, Australia: NSW Agriculture. 50 pp. ISBN 0-7310-5629-9.

**Integrated management of insects, mites and diseases in ornamental crops.** (1994) by Powell, C.C. & Lindquist, R.K. Batavia, USA: Ball Publishing. 118 pp. ISBN 1-883052-06-8.

**Fundamentals of Soil Ecology.** (1996) By Coleman, D. C. and D. A. Crossley, Jr. Academic Press, San Diego etc. ISBN 0-12-179725-2. [Includes soil mites as significant factors in soil ecology.]

**Trombiculid Mites of China.** This book is edited by Prof. Jiacan LI of Sun Yat-sen University of Medical Science and co-edited by Prof Dunqing WANG of Fujian Medical College and Prof Xinbao CHEN of Bungbu Medical College, with contributions from 12 Chinese specialists of trombiculid mites and tsutsugamushi disease. The book consists of two parts: an introduction and a systematic account of species. The introduction discusses the following topics: geographical distribution, life cycle, ecology, culture and rearing, epidemiology, transmission of tsutsugamushi diseases, pest control, isolation and detection of *Rickettsia tsutsugamushi* from trombiculid mites and mouse hosts, physiology and biochemistry, and application of molecular biology technique. The systematic account section describes and keys to 468 Chinese species (with 542 figures) belonging to 46 genera, 4 tribes and 3 subfamilies in the Trombiculidae and Leeuwenhoekidae. The preparation and publication of the book are funded by Guangdong Excellent Scientific Treatise Publication Foundation. It is published by Guangdong Science and Technology Press. It is expected to be available in December 1996.

(Submitted by Dunqing WANG)

## Book Review



**Ecological Dynamics of Tick-borne Zoonoses**, edited by Daniel E. Sonenshine and Thomas N. Mather, Oxford University Press, Inc., New York, 1994, xvi + 447 pp, ISBN 0-19-507313-4, \$165.00.

This book is written due to the increasing importance of tick-borne diseases to public health and expansion of the knowledge of these diseases affecting human, livestock and other animals in recent years. The purpose of this book is to provide the readers with the updated knowledge necessary to understand the ecological principles that contribute to the occurrence of tick-borne diseases and ultimately, to apply these principles to solve specific disease problems.

This one-volume book is a collection of contributions from internationally renowned experts in the field around the world. The book is divided into two parts. Part 1 (Principles, including chapters 1-8) is mainly focused on principles related to the dynamics of tick-borne zoonoses. Both biotic and abiotic factors affecting vector and reservoir competence, population regulation, geographical dissemination, or pathogen transmission and survival are described. Furthermore, speculation on how these factors interact to result in the enzootic and epizootic state observed in nature is also provided. Part 2 (Representative of tick-borne diseases, including chapters 9-13) provides specific disease examples to demonstrate how these principles integrate. Diseases discussed in this part of the book include theileriosis, heartwater, Rocky Mountain spotted fever, Lyme disease, tick-borne encephalitis subgroup, and Crimean-Congo hemorrhagic fever. An index is also provided conveniently to the readers.

This is an excellent book for professionals in the field of vector ecology and tick-borne diseases. In my personal judgment, this is the most recently published book in the subject and strongly encourage my colleagues to check it out when it is available.

□   □   □

Renjie HU

**Mites: Ecological and Evolutionary Analysis of Life-History Patterns**. Edited by M. A. Houck, 1994. New York & London: Chapman & Hall, Inc. 357 pp. ISBN 0-412-02991-X (hb).

In acarology, it seems that interesting and important publications often result from conferences, symposia, or meetings. A symposium entitled 'Acari: Life History and Reproductive Patterns' and dedicated to two American acarologists, Dr E. W. Baker and Dr G. W. Wharton, was held in December 1989 in conjunction with the Entomological Society of America meeting in Texas. The book [note the change in the title] comprises eleven chapters and is a collection of works from fifteen contributors, twelve of whom were present at the symposium.

The Foreword by E. E. Lindquist is very informative, and includes suggestions of mites and ticks as suitable material for biological experiments. He particularly makes the point that, although the Acari have almost endless potential as study subjects, ecological and evolutionary concepts have been based predominantly on studies of vertebrates, vascular plants, a few insect groups, and selected single-cell organisms. The book makes a positive contribution towards filling this gap. The editor's Preface includes an explanation of how this book was initiated and the intention for it, plus a section on the major accomplishments of Baker and Wharton.

Chapters 1-4 deal with the Mesostigmata. J. M. Brown & D. L. Wilson report the behavioural and life history adaptations of *Poecilochirus carabi* (Parasitidae) to different hosts and the consequences of geographical shifts in host communities. The results indicate, among other findings, that *P. carabi* as currently defined probably includes several reproductively isolated and morphologically distinct species. R. K. Colwell & S. Naem examine the effects of host plants on the life-history patterns of hummingbird flower mites of Ascidae, and conclude that virtually every

aspect of the mites's lives is affected by features of host-plant phenology and morphology. M. A. Houck discusses mites as potential horizontal transfer vectors of eukaryotic mobile genes using a mesostigmatid, *Proctolaelaps regalis* (Ascidae), as a model. (This chapter seems not to be in the right place, because it changes subject in the middle of the book, although it uses a mesostigmatid as an example.) I believe this will be a novel theme for most readers. The author obviously had this in mind, and explains the subject in simple language for such a complicated topic, including some background information on molecular biological aspects such as 'P Transposable Elements'. M. W. Sabelis & A. Janssen conclude that the evolution of life-history patterns in the Phytoseiidae is critically dependent on the local distribution patterns of their prey.

Chapter 5, by R. A. Norton, reviews the life-history traits and ideas on life-history evolution of Oribatida, and discusses the consequences for the origin of the Astigmata. Norton also emphasises the importance of phylogenetic hypotheses on the understanding of life-history evolution. Chapters 6 & 7 are devoted to the Astigmata. B. M. OConnor discusses astigmatid life-history modifications, and concludes that the lineage is extremely successful at colonizing and exploiting patchy or ephemeral resources, a success due to an ancestral switch in life-history parameters. N. J. Fashing examines the astigmatid mites living in water-filled treeholes.

Parasitism or transition from commensalism to parasitism is discussed in chapters 8-10. F. J. Radvosky reviews the evolution of parasitism and the distribution of some dermanyssoid mites on vertebrate hosts, and notes that the sequence from a free-living predatory type to a parasite (as in Laelapidae, Macronyssidae, and Rhinonyssidae) is unusual and instructive. G. C. Eickwort examines the mites associated with bees. Houck discusses how phoretic mites adapt and evolve into parasitism.

In the final chapter, D. L. Wrensch, J. B. Kethley, & R. A. Norton (chapter 11) deal in depth with the cytogenetics of holokinetic chromosomes and inverted meiosis, which are widespread in mites, concluding that mites "do things they shouldn't." The widespread success of mites in thelytokous reproduction (females from unfertilised eggs) and in arrhenotoky (production of highly inbred haploid males from unfertilised eggs) directly challenges widely held evolutionary theories, and causes embarrassment to the current cytogenetic paradigm. The structure, behaviour, and normal and inverted meiosis of holokinetic chromosomes are described and illustrated. Inverted meiosis is explained in the context of thelytokes, diploidy, haploidy, etc. The chapter finishes by suggesting amending the current cytogenetic synthesis to include a third type of organism, with holokinetic chromosomes and inverted meiosis. Many other animals and plants appear to have holokinetic chromosomes, and thus the potential for inverted meiosis, and it is possible that these are ancestral features in eukaryotes.

I found this book very interesting. It is well presented and contains few errors. The book fulfills the editor's statement that "The intent was not to be inclusive but rather to include innovative studies with the broadest interest." It would be interesting to have examples from other major groups such as Prostigmata, Ixodida, Holothyrida, and Opilioacarida, perhaps a theme for another book along these lines.

Ting-Kui QIN

**Acari: Eriophyoidea (1). Economic Insect Fauna of China.** Fasc. 44. By Haiyuan KUANG. 1995. Science Press, Beijing. 198 pp + VII plates. Price RMB Yuan 43.60. ISBN 7-03-004385-51Q.543.

The taxonomic study of the Eriophyoidea in mainland China by the Chinese actually began

in early 1980's when Professor Haiyuan KUANG and Professors Jieliu XIN and Huiqin DONG described one new species in 1980 and two new species in 1981 respectively (Kuang, H.-Y. 1980; Xin, J.-L. and Dong, H.-Q. 1981). The book "Acari: Eriophyoidea (I). Economic Insect Fauna of China. Fasc. 44" by Haiyuan KUANG is a summary of more than 15 year's eriophyoid mite taxonomic research in mainland China.

The book is divided into three main parts: introduction, characters for morphological classification and classification. "The introduction" deals with the economic importance, the classification status, species and distribution, biological characteristics, control measures and collecting, preservation and mounting of specimens. "The characters for morphological classification" part gives us a general idea of characters which were systematically introduced by Keifer (1975) and have been used by many acarologists in the world. Although a few acarologists use some new characters (in the new notation system) to classify the eriophyoid mites (e.g. Flechtmann, 1995), many people especially those in China and India still use Keifer's old morphological system.

The classification part is the main part of the book. It introduces 152 eriophyoid species in mainland China; each species is provided with a morphological description, host, distribution and illustration. These species belong to 3 families, 7 subfamilies and 63 genera. In the Nalepellidae, only one subfamily Nalepellinae and four genera (*Boczekella*, *Trisetacus*, *Setoptus* and *Nalepella*, each with a single species) are described. In the Eriophyidae, six genera (*Paracolopodacus*, *Colopodacus*, *Anthopoda*, *Nothopoda*, *Disella*, and *Neocosella*, each with a single species) are described in Nothopodinae, six genera (*Cecidophyes*, *Cecidophyopsis*, *Glyptacus*, *Coptophylla*, *Colomerus* and *Paracolomerus*) in Cecidophyinae, four genera (*Acerimina*, *Eriophyes*, *Aceria* and *Acalitus*) in Eriophyinae, and thirty genera (e.g. *Knorella*,

*Tegonotus*, *Epitrimerus*, *Aculops*, *Aculus*, *Tetra*, *Abacarus*, etc.) in Phyllocoptinae. In the two subfamilies Rhyncaphyoptinae and Diptilomiopinae of the Rhyncaphyoptidae, the former contains eight genera (*Quadracus*, *Peralox*, *Rhinophyoptus*, *Rhyncaphyoptus*, *Catarhinus*, *Neocatahinus*, *Quadrporca* and *Asetacus*), the latter five genera (*Diptilomiopus*, *Rhynacus*, *Pararhynacus*, *Acarhynchus* and *Diptacus*).

The author followed Keifer's old classification system and used old names Nalepellidae and Rhyncaphyoptidae in the book. These two family names should be replaced by Phytoptidae and Diptilomiopidae which have priority. Also, *Neoknorella* listed separately in the book is a junior synonym of *Knorella*; *Neoknorella bambusae* should be *Knorella bambusae*, the original *Knorella bambusae* was replaced by *Knorella fuzhoui* (Amrine & Stasny, 1995). There are a few other synonyms. Despite this, this book is an important contribution to mite fauna of China and is useful for people to know eriophyoid mite fauna in mainland China.

## References

- Amrine, Jr, J. W. & Stasny, T. A. (1994) Catalog of the Eriophyoid (Acarina: Prostigmata) of the World. Indira Publishing House, Michigan. 798 pp.
- Flechtmann, C. H. W. (1995) Two new species of Eriophyid mites (Acari, Prostigmata, Eriophyoidea) from *Miconia candolleana* Triana from Brazil. *International Journal of Acarology*, 21, 83-88.
- Keifer, H. H. (1975) Chapter 12. Eriophyoidea. Pp. 327-396. in Jeppson, L. R., Keifer, H. H. and Baker, E. W. 1975. Mites Injurious To Economic Plants. University of California Press, Berkeley and Los Angeles, 614 pp + 74 pls.
- Kuang, H.-Y. (1980) A new species of the genus *Asetacus* Keifer from China (Eriophyoidea: Rhyncaphyoptidae). *Entomotaxonomia*, 2(3), 235-236.
- Xin, J.-L. & Dong, H.-Q. (1981) Two new species of the genus *Rhyncaphyoptus* from China (Acarina: Eriophyoidea). *Fudan Journal (Natural Science)*, 20(2), 216-219.

## Acarology Information Sources

Acarology information is available from a variety of sources. This note provides a handy list of some important sources for the benefit of SAAS members.

**Zoological Record.** This comprehensive systematic catalogue is published annually since 1864. Information on the Acari is found in Section 12 Arachnida, with an almost exhaustive coverage of the literature of systematic acarology. It is an invaluable source for anyone interested in acarology. Contact **Biosis** UK (Garforth House, 54 Micklegate, York, North Yorkshire YO1 1LF, UK) for further information.

**Acarologia.** This is a quarterly journal published in France, with contributions from acarologists throughout the world. It was first published in 1959. It publishes papers on all aspects of the Acari (although most papers are taxonomic in nature). The current editor is Prof. Yves Coineau, *Acarologia*, 61, Rue de Buffon, F-75005, Paris, France. Phone: +33-40-937-577.

E-mail: acarolog@cimrsl.mnhn.fr

**International Journal of Acarology.** This is a quarterly journal, first started in India in 1975 and now published in the USA. Similar to *Acarologia* in coverage. For further information: Dr. V. Prasad, International Journal of Acarology, Indira Publishing House, P.O Box 250456, West Bloomfield, MI 48325-0456, USA.

**Experimental and Applied Acarology** was started as a quarterly journal in the Netherlands. It is now a monthly journal published by Chapman and Hall in the UK. It has published more non-taxonomic papers on the Acari than other journals since its birth in 1985. For further information: Editor, Experimental & Applied Acarology, Section Population Biology, University of Amsterdam, Kruislaan 320, NL-1098 SM Amsterdam, The Netherlands. E-mail geest@bio.uva.nl

FAX +31 20 5257754 Phone +31 20 5257740

**Journal of Acarology.** This is a semi-annual journal with contributions in English from Indian acarologists. Its older name Indian Journal of Acarology is more familiar to acarologists. For further information: Acarological Society of India, Department of Entomology, University of Agricultural Sciences, GKVK, Bangalore 560065, INDIA. The society also publishes an occasional Acarology Newsletter.

**Journal of the Acarological Society of Japan.** This is a semi-annual journal with contributions in English and Japanese (with English abstract) from Japanese acarologists. This journal continues of the Proceedings of the Japanese Association of Acarology. For further information: The Acarological Society of Japan, c/o Faculty of Horticulture, Chiba University, Matsudo, Chiba, 271 Japan.

**Acarina** - Russian Journal of Acarology. This is a semi-annual journal published in Russia, with papers in English and Russian (with English abstract). The first volume was published in 1994. Further information is available from: Dr. O.V. Voltzit, Zoological Museum of Moscow Lomonosov State University Herzen str. 6, K-9 Moscow 103009, Russia.

**Systematic and Applied Acarology.** Published annually in the UK by the Systematic and Applied Acarology Society with contributions in English from acarologists in China and elsewhere in the world. For further information: Dr. Zhi-Qiang Zhang, Systematic and Applied Acarology Society, c/o Department of Entomology, The Natural History Museum, London SW7 5BD, UK. Z.Zhang@nhm.ac.uk

**Acarology@nhm.ac.uk.** This is an internet e-mail network of acarologists worldwide. It was established in March 1995 and has become a useful forum for discussion and information exchange among acarologists. For further information: Z.Zhang@nhm.ac.uk.

Compiled by Zhi-Qiang ZHANG

## Systematic and Applied Acarology, Vol. 1, 1996 (in press)

### Biochemistry, Toxicology & Genetics

Selection and genetic analysis of fenvalerate resistance in *Amblyseius pseudolongispinosus* (Acari: Phytoseiidae). K.-Y. Zhu, L.-S. Ke & J.-L. Xin

RAPD-PCR method for detecting DNA polymorphism in *Boophilus microplus* (Acari: Ixodidae). M.-Y. Lan *et al.*

Host-tick immune interaction. I. Analysis of common antigenic components between *Ixodes sinensis* and *Haemaphysalis bispinosa* (Acari: Ixodidae). Z.-G. Liu *et al.*

### Biocontrol, Ecology & Behaviour

Approaches to enhance the effectiveness of biocontrol of *Panonychus citri* (Acari: Tetranychidae) with *Sthethorus punctillum* (Coleoptera: Coccinellidae) in citrus orchards in Guizhou. X.-L. Yang *et al.*

Biocontrol of *Tetranychus kanzawai* (Acari: Tetranychidae) using *Phytoseiulus persimilis* (Acari: Phytoseiidae) in open-air strawberry gardens. Y.-X. Zhang *et al.*

Biology of *Allothrombium ovatum* (Acari: Trombididae) and its controlling effect on *Aphis gossypii* (Homoptera: Aphididae). Y.-C. Dong, R.-B. Ran & J.-Y. Xiang

Infestation of *Drosophila cultures* (Diptera: Drosophilidae) by mites of *Proctolaelaps* (Acari: Ascidae) and experiments on mite feeding habits. W. Weisser & Z.-Q. Zhang

Laboratory life history of the predaceous mite *Typhlodromus athiasae* (Acari: Phytoseiidae). H. Reuveny, E. Palevsky & U. Gerson

Parasitism of aphids (Homoptera: Aphididae) by larvae of *Allothrombium pulvinum* (Acari: Trombididae): host species selection, host size selection, and superparasitism. Z.-Q. Zhang

Sources and dispersal of *Allothrombium ovatum* larvae (Acari: Trombididae) in cotton fields and effects of larval mites on *Aphis gossypii* (Homoptera: Aphididae). H.-J. Zhang & J.-S. Li

Study on the spatial distribution and temporal dynamics of *Tetranychus kanzawai* (Acari: Tetranychidae) in open-air strawberry gardens. Y.-X. Zhang *et al.*

### Systematics, Morphology & Evolution

A review and cladistic analysis of the Eupodoidea (Acari: Acariformes). T.-K. Qin

A cladistic analysis of the Eriophyoidea (Acari: Prostigmata): tests of monophyly of families. X.-Y. Hong & Z.-Q. Zhang

A new genus of the family Xenocaligonellidae (Acari: Raphignathoidea). Q.-H. Fan & Y. Chen

*Abrolophus* and *Grandjeanella* larvae (Acari: Erythraeidae) ectoparasitic on thrips (Thysanoptera: Thripidae). Z.-Q. Zhang & A. Goldarazena

Korcak patchiness exponent and distribution of taxonomic richness in the Oribatida (Acari: Acariformes). Z.-Q. Zhang

Taxonomic notes on the sand mite genus *Multisetosa* (Acariformes: Leeuwenhoekidae). T.-H. Wen

Descriptions of the larva, deutonymph and adult of *Trombidium southcotti* sp. nov. (Acari: Trombididae) from Iran. Z.-Q. Zhang & A. Saboori

A new species of *Pyemotes* (Acari: Pyemotidae) parasitic on bark beetles (Coleoptera: Scolytidae) from Hebei, China. L.-C. Yu & L.-R. Liang

Two new species of the Tarsoneminae from China (Acari: Tarsonemidae). J.-Z. Lin & Y.-X. Zhang

The genus *Macronyssus* (Acari: Macro-nyssidae) in China with descriptions of two new species. M.-S. Zhou, D.-Q. Wang & S.-R. Wang

Four new species of Hypoaspidae (Acari: Laelapidae) from moss in China. X.-N. Xu & L.-R. Liang

A new genus and new species of the Otopheidomenidae (Acari: Mesostigmata) from long-horned grasshoppers. C.-F. Mo

*Knorella thailandica*, a new name for *Knorella bambusae* Chandrapatya and a key to world species of *Knorella* (Acari: Eriophyoidea). X.-Y. Hong

A new host record of *Allothrombium triticum* larvae (Acari: Trombididae) ectoparasitic on *Coccinella septempunctata* (Coleoptera: Coccinellidae). Z.-Q. Zhang & A. Saboori

Notes on *Allothrombium pulvinum* (Acari: Trombididae), a species new to the fauna of Spain. A. Goldarazena & Z.-Q. Zhang

First record of the cattle itch mite, *Psorobia bos* (Prostigmata: Psorergatidae), in the Palaearctic region. A. S. Baker *et al.*

## Current contents of acarological journals

### International Journal of Acarology

Vol. 22, No. 1., January 1996

**Momen, F. & Lundqvist, L.** A new genus, *Quadrotydeus*, and three new species of the family Tydeidae (Acari: Prostigmata) from southern Sweden. 3-10.

**Fain, A. & Jocqué, R.** A new genus and species of larval Eutrombidiinae Thor, 1935 (Acari: Microtrombidiidae) from an afro-tropical spider. 11-16.

**Smith Meyer, M.K.P. & Ueckermann, E.A.** Three new species of *Aceria* (Acari: Eriophyidae) from South African Polygalaceae and Polygonaceae. 17-22.

**De Guzman, L.I. & Delfinado-Baker, M.** A new species of *Varroa* (Acari: Varroidae) associated with *Apis koschevnikovi* (Aphidae: Hymenoptera) in Borneo. 23-27.

**Cramer, C. & Cook, D.** A new species of *Stygarrhenurus* (Acari, Hungarohydracridae) and a discussion of its systematic position. 29-32.

**Ramaraju, K. & Mohanasundaram, M.** New species of *Podapolipus*, *Podapolipoides* and *Tarsopolipus* (Acari: Podapolidae) from south India. 33-41.

**Denmark, H.A. & Rather, A.Q.** Revision of the genus *Neoseiulella* (Acari: Phytoseiidae). 43-77.

Vol. 22, No. 2. June 1996

**Swift, A.Q.** Hawaiian Raphignathoidea: Family Cryptognathidae (Acariformes: Prostigmata). 83-99.

**Fain, A. & Jocque, R.** A new larva of the genus *Leptus* Latreille, 1796 (Acari: Erythraeidae). 101-08.

**Hatzinikolis, E.N. & Emmanouel, N.G.** *Bryobia agrioticus* sp. nov. of Bryobiinae (Acari: Tetranychidae) from Greece. 109-111.

**Klompen, J.S.H. et al.** Idiosomal lyrifissures, setal, and small glands as taxonomic characters and potential indicators of ancestral segmentation patterns in larval Ixodidae (Acari: Ixodida). 113-34.

**Schwarz, H.H.** Host range and behavioral preferences in German sibling species of the *Poecilochirus carabi* complex. 135-140.

**Yoder, J.A.** The Madagascar hissing-cockroach mite (*Gromphadorholaelaps schaeferi*): first observations of its larva and ptyalophagy in Acari. 141-148.

□

.....continued on right bottom

### Acarologia

Vol. 37, No. 1, 1996

**F. M. Momen.** Effect of prey density on reproduction, prey consumption and sex ratio of *Amblyseius barkeri* (Acari: Phytoseiidae). 3-6

**B. Degeilh, J. Pichot, B. Gilot, S. Allen, B. Doche & C. Guiguen J. C.** Dynamique annuelle des cas de primo-infestation humaine de Borréliose de Lyme (Erythème Chronique Migrant) en France et phénologie des populations de tiques vectrices (*Ixodes ricinus* Linné, 1758): essai de corrélation. 7-17

**A. Estrada-Peña, M. Bosch & V. Pedrocchi.** First record of *Ornithodoros (Alectorobius) maritimus* Vermeil & Marguet (Acari: Argasidae) in Spain. 19-21.

**F. M. Momen & T. Solhøy.** A first record of the genus *Tydeus* in Himalaya, *Tydeus lundqvisti* nov. spec. (Acari: Actinedida: Tydeidae). 23-25

**E. N. Hatzinikolis & N. G. Emanouel.** *Bryobia piliensis* sp. nov. of the family Tetranychidae (Acari, Prostigmata) from Greece. 27-30

**A. Wohltmann & F.-E. Wendt.** Observations on the biology of two hygrobiotic trombidid mites (Acari: Prostigmata: Parasitengonae), with special regard to host recognition and parasitism tactics. 31-44

**H. Smit.** New species of water mites from New Zealand, with remarks on the water mites from ponds and lakes (Acari, Hydrachnellae). 45-53

**L. S. Subias & A. Arillo.** *Serratoppia guanicola* sp. nov. from a cave in central Spain. Iberian species of the genus *Serratoppia* (Acariformes, Oribatida, Oppiidae). 55-60

**C. Pérez-Iñigo & D. Baggio.** Oribates édaphiques du Brésil (IX). Oribates de l'État de Minas Gerais (Première partie). 61-72.

---

continued from left bottom

**Shevtchenko, V.G. et al.** Taxonomic separation of similar species of eriophyid mites, *Aceria tulipae* Keif. and *A. tritici* sp. n. (Acarina, Eriophyoidea) - vectors of the viruses of onions and wheat. 149-60.

**Experimental & Applied Acarology**  
**Vol. 20, No. 1., January 1996**

**Camporese, P. & Duso, C.** Different colonization patterns of phytophagous and predatory mites (Acari: Tetranychidae, Phytoseiidae) on three grape varieties: a case study. 1-22.

**Rijpkema, S., Golubic, M., Verbeek-De Kruif, N. & Schellekens, J.** Identification of four genomic groups of *Borrelia burgdorferi* sensu lato in *Ixodes ricinus* ticks collected in a Lyme borreliosis endemic region of northern Croatia. 29-30.

**Norval, R.A.I., Sonenshine, D. E., Allan, S. A. and Burridge, M. J.** Efficacy of pheromone-acaricide-impregnated tail-tag decoys for controlling the bont tick, *Amblyomma hebraeum* (Acari: Ixodidae), on cattle in Zimbabwe. 31-46.

**Yeruham, I., Hadami, A., Galker, F & Rosen, S.** The seasonal occurrence of ticks (Acari: Ixodidae) on sheep and in the field in the Judean area of Israel. 47-56.

**Rehacek, J., Kovacova, E & Kocianova, E.** Isolation of *Nosema slovacica* (Microsporidiae) from *Dermacentor reticulatus* ticks (Acari: Ixodidae) collected in Hungary. 57-60.

**Vol. 20, No. 2., February 1996**

**Jiang, Y., Risdill-Smith, T.J. & Ghisalberti, E. L.** Assays for the effects of volatile compounds from artificially damaged cotyledons of subterranean clover on the redlegged earth mite, *Halotydeus destructor*. 61-72.

**Bruce-Oliver, S.J., Hoy, M.A. & Yaninek, J.S.** Effects of some food sources associated with cassava in Africa on the development fecundity and longevity of *Euseius justis* (Pritchard and Baker) (Acari: Phytoseiidae). 73-85.

**Lin, H.-R., Otis, G.W. & Scott-Dupree, C.** Comparative resistance in Buckfast and Canadian stocks of honey bees (*Apis mellifera* L.) to infestation by honey bee tracheal mites (*Acarapis woodi*) (Rennie). 87-101.

**Fries, I & Rosenkrantz, P.** Number of reproductive cycles of *Varroa jacobsoni* in honey-bee (*Apis mellifera*) colonies. 103-112.

**Osakabe, Mh & Komazaki, S.** Differences in esterase isozymes between *Panonychus citri* populations infesting citrus and Osmanthus. 113-119.

**Experimental & Applied Acarology**  
**Vol. 20, No. 3., March 1996**

**Sammataro, D. & Needham, G.R.** Host-seeking behaviour of tracheal mites (Acari: Tarsonemidae) on honey bees (Hymenoptera: Apidae). 121-136.

**Saboori, A. & Zhang, Z.-Q.** Biology of *Allothrombium pulvinum* Ewing (Acari: Trombididae) in west Mazandran, Iran. 137-142.

**MacRae, I.V. & Croft, B. A.** Differential impact of egg predation by *Zetzellia mali* (Acari: Stigmaeidae) on *Metaseiulus occidentalis* and *Typhlodromus pyri* (Acari: Phytoseiidae). 143-154.

**Heller-Haupt, A., Kargaruki, L.K. & Varma, M.G.R.** Resistance and cross-resistance in rabbits to adults of three species of African ticks (Acari: Ixodidae). 155-165.

**Popov, S. Ya & Veerman, A.** Behavioural response and winter survival of mated and unmated diapausing females of the Tetranychus atlanticus-urticae complex (Acari, Tetranychidae). 167-175.

**Vol. 20, No. 4. April 1996.**

**Thwaite, W.G. et al.** Tebufenpyrad: compatibility with integrated mite control on apples. 177- 191.

**Lawson D.S. et al.** Aerial dispersal of European red mites (Acari: Tetranychidae) in commercial apple orchards. 193-202.

**Baker, G.T.** Chemoreception in four species of water mites (Acari: Hydrachnida): behavioural and morphological evidence. 203-213.

**Zhao, G.Y. et al.** Clofentazine toxicity and fate in the bulb mite *Rhizoglyphus echinopus*. 215-222.

**Solomon, G. & Kaaya, G. P.** Comparison of resistance in three breeds of cattle against African ixodid ticks. 223-230.

**XU, N., Chen, H.-C., Chen, X.F. & Chen Z.M.** A novel method for nutritional studies of phytophagous mites, using vacuolated leaf disks. 231-235.

---

*Experimental & Applied Acarology* is published by Chapman & Hall (2-6 Boundary Row, London SE1 8HN, UK) from 1995. Editorial enquiries to: Dr. L.P.L. van der Geest, Section Population Biology, University of Amsterdam, Kruislaan 320, 1098 SM Amsterdam, The Netherlands.

## Journal of the Acarological Society of Japan

Vol. 5, No.1, May 1996

**Takaku, G.** A description of the male of *Pachylaelaps copris* Ishikawa, 1984 (Acari: Pachylaelapidae). 1-6.

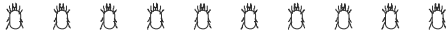
**Abe, H.** A new species of the genus *Anomalohalacarus* (Acari: Halacaridae) from Japan with notes on taxonomic characters. 7-16.

**Ehara, S. & T. Gotoh.** Two new species of spider mites occurring in Japan (Acari, Tetranychidae). 17-25.

**Kuriki, G.:** On the faecal pellet deposition of *Trhypochthoniellus setosus* Willmann (Acari: Trhypochthoniidae). 27-34.

**Fujimoto, K.** The difference of the seasonal activities of *Haemaphysalis longicornis* and *Ixodes persulcatus* females (Acari: Ixodidae) observed in a field experiment. 35-38.

**Kadosaka, T. & J. Hasegawa.** A case of human tick bite by *Ixodes turdus* (In Japanese). 39-40.



### Acknowledgements

We thank the following members for their recent financial contributions to SAAS

Dr. Alex Christian (Germany)  
Dr. Zhigang LIU (China)  
Prof. A. TAKAFUJI (Japan)

*Special thanks to*  
Prof. Cheng-Feng MO (Hong Kong)  
for his generous contribution of  
£200 to the Society



### Change of address

**HU, Renjie** "œ" \*%  
436 Science II Building, Dept. of Entomology,  
Iowa State University, Ames, IA 50011, USA

Please send change or correction of address to the Editor.

## New members of SAAS

The following is a list of members joined since 15 March 1996.

### AHAMAD, Mariana

Division of Acarol., Institute for Medical Research,  
Jalan Pahang, 50588 Kuala Lumpur, Malaysia.

### Christian, Alex

Staatliches Museum für Naturkunde Görlitz,  
Postfach: 300 154, 02806 Gorlitz, Am Museum 1,  
02826, Germany.

### EHARA, Shôzô

Hamasaka 2-15-7, Tottori 680, Japan.

### EVANS, G.O.

34 Hormare Crescent, Storrington, Pulborough,  
West Sussex, RH204QT, UK

### JIANG, Zaijie

Department of Biology, Beijing Normal  
University, Beijing 100875.

### HO, Chyi-Chen

Taiwan Agricultural Research Institute, Wufeng,  
Taichung, Taiwan.

### LUNDQVIST, L.

Lund University, Dept. Systematic Zoology,  
Helgonavägen 3, S-223 62 Lund, Sweden

### LIU, Zhigang

Allergy Laboratory, Dept. of Parasitology, Jiangxi  
Medical College, Nanchang, Jiangxi 330006.

### LU, Jianquan

Dept. of Biology, Zhaoqin Teacher's College,  
Chaoqin, Guangdong 526062.

### SWIFT, S. F.

Bishop Museum, Department of Natural Sciences,  
1525 Bernice St., P.O. Box 19000, Honolulu,  
Hawaii 96817 USA

### TAKAFUJI, Akio

Laboratory of Ecological Information, Faculty of  
Agriculture, Kyoto University, Kyoto 606, Japan

### UECKERMANN, E. A.

Plant Protection Research Institute ARC,  
Biosystematics Division, Private Bag x134,  
Pretoria, 0061, Rep. of South Africa.

### YIN, Suigong

Dept. of Plant Protection, Shenyang Agricultural  
University, Shenyang, Liaoning 110611

# Systematic & Applied Acarology Society

Application for membership

*Systematic and Applied Acarology Society* (SAAS) aims at promoting the development of acarology in China and fostering cooperation among acarologists in China and other parts of the world. Anyone interested in the study of mites and ticks is welcome to join SAAS. There is no membership fee for 1996. A voluntary contribution of £6/\$10 is welcome. Members receive free of charge the newsletter of the Society (*Acarology Bulletin*) and can publish free of charge in *Systematic and Applied Acarology* (SAA). Members are, however, obliged to subscribe to SAA.

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

Address:

Telephone: Business: Home:

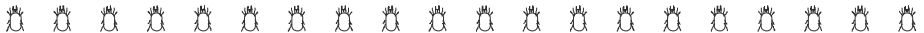
FAX :   E-mail:

Degrees:  Institution   Date

Research Interest:

Please send the completed application form to :

Dr. Zhi-Qiang Zhang    or  
International Institute of Entomology   Xin Jie-Liu Acarology Laboratory  
c/o The Natural History Museum   Dept. of Environmental & Resources Biology  
London SW7 5BD   Fudan University  
United Kingdom    Shanghai 200433, CHINA



ACAROLOGY BULLETIN (ISSN 1361-8091) is a newsletter of the Systematic and Applied Acarology Society (SAAS). It is published in four issues in 1996 (January, April, July and October) and is distributed free to members of SAAS. All correspondence regarding the *Acarology Bulletin* should be sent to Dr. Zhi-Qiang Zhang, International Institute of Entomology, c/o The Natural History Museum, London SW7 5BD, UK. Non-members who want to subscribe should order from Panda Books Society (P.O. Box 8773, London SW7 4ZF, UK). Subscription rate for volume 1 in 1996 is £6 or \$10.

© 1996 Systematic & Applied Acarology Society.

Printed in England.