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Acarology Bulletin

Newsletter of the SYSTEMATIC & APPLIED ACAROLOGY SOCIETY

President's message

Dear colleagues:

I am pleased to announce that the second volume of *Systematic and Applied Acarology* is now in press and will appear in late July. I would like to thank all authors for submitting their manuscripts to SAA. A few editorial problems were noted during reviews and editing of the manuscripts: (1) quite a few manuscripts were submitted single-spaced, making it hard for reviewers to comment and assist in revising the text; (2) many authors listed literature in the references without citing them in the text or citing literature in the text without listing them in the references; (3) some authors did not list all authors of a paper and full titles of journals of papers in the references; (4) some authors did not give the the describer(s) of species when scientific names were first mentioned. I request all authors to strictly follow the format of the journal as described in the *Notice to Authors* when preparing manuscripts for SAA.

☐ ☐ Zhi-Qiang Zhang

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Acarology and member news

The 10th International Congress of Acarology: From the most recent circular and contacts with the organizers in Australia, it is apparent that the 10th Congress, to be convened in Canberra, Australia from July 5-10, 1998, is on schedule. For more information, please contact Dr. R. B. Halliday, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601, Australia (e-mil: bruceh@ento.csiro.au, Fax: 616 246 4000).

The Sixth National Congress of Entomological Society of China will be held in Huangshan (Yellow Mountain) City, Anhui Province from October 27-30, 1997. The deadline for submission of articles is June 30. Anyone who is interested in attending the meeting should send your article(s) and printing fee (RMB80) to Mr. Xiaoxing MENG, Secretary of Entomological Society of China, Institute of Zoology, Chinese Academy of Sciences, Beijing 100080, China. The registration fee is RMB 600, and should be sent directly to Anhui Entomological Society (c/o Department of Plant Protection, Anhui Agricultural University, Hefei 230036, Anhui Province). The second national youth science award of Entomological Society of China will be issued during the congress.

Acarological Society of America Meeting: The annual meeting of ASA was conducted on Sunday, December 8, 1996 in Galt House Hotel, Louisville, Kentucky. The meeting began at 9:00 am and ended at 4:30 pm. The formal conference on acarine-borne diseases of plants and animals was conducted by organizer Dr. Robert S. Lane, University of California at Berkeley and moderator Dr. Carl C. Childers, University of Florida at Lake Alfred. The contributed paper session was conducted by organizer Dr. William J. Wrenn, University of North Dakota and moderator Dr. Dana Wrensch, Ohio State University at Columbus. The meeting was attended by about 150 acarologists and was a great success.

National Symposium on IPM in China: Organised by Entomological Society of China and the Ministry of Agriculture, the symposium was held in Kunming in December 1996. The meeting was attended by more than 700 delegates from all over the mainland China. The meeting dealed with IPM theories and practices in China, including some IPM techniques in economic mites such as *Tetranychus cinnabarinus*, *Panonychus citri*, *Phyllocoptruta oleivora* and *T. kanzawai*. The Proceedings of the symposium was published by China Agricultural Science and Technology Publishing House.

Dr. Zhi-Qiang ZHANG will visit Fujian, China in July 1997. He is invited by Fujian Academy of Agricultural Sciences to lecture/study on the biology and control of bamboo mites in Fujian. The joint project with Yanxuan Zhang is funded by Fujian Academy of Agricultural Sciences. While in China, Dr. Zhang will lecture at the Fujian Academy of Agricultural Sciences, Fujian Agricultural University and Fujian Forestry Bureau. He will also conduct a field survey in selected bamboo growing areas in Fujian Province and advise on mite control measures. On his trip to Fujian, Dr. Zhang will stop by Fudan University for a visit with his colleagues there.

Dr. Kerwin E. HYLAND, professor of zoology, recently retired from the University of Rhode Island after serving the faculty at the university for more than forty years. Prof. Hyland received his B.Sc. from the Pennsylvania State University, his M.Sc. from Tulane University, and the Ph.D. from Duke University. His research interests has been the biology and systematics of parasitic insects, mites and ticks as well as vector-borne diseases. More recently, he has been

conducting research on tick-borne diseases, particularly Lyme disease and human babesiosis in the northeastern United States. In 1989, he established the URI Tick Research Laboratory and continues to serve as its director. During the same period, with the invasion of the U. S. by honeybee mites, he served as the Rhode Island state apiary inspector.

Dr. Xiaoyue HONG of Nanjing Agricultural University and Professor Hongfu ZHOU of Suzhou Medical College were officially promoted to be the council members of Jiangsu Entomological Society early this year. Dr. Hong also holds the deputy secretary position of the society. As the largest provincial entomological society in China, Jiangsu Entomological Society has nearly five-hundred members, and has nine commissions in agricultural entomology, forest entomology, urban entomology, medical entomology, and so on.

Jin-Seong KIM from the International Quarantine Cooperation Division, National Plant Quarantine Service, South Korea, arrived in Auckland in early March. He will be studying mites, especially plant-feeding mites, and scale insects for two years. His study is supported by a Korean Government Long-Term fellowship for Overseas Study. He is hosted by Landcare Research and based at Mt. Albert Research Center, Auckland, New Zealand, and is working mainly with Dr. Ting-Kui QIN. Kim is also hoping to visit Agricutural Quarantine Service and Plant Protection Centre and MAF in New Zealand in the late stage of his study. Kim has been a quarantine officer since 1981 in South Korea, mainly working for International Quarantine Cooperation and dealing with bilateral matters between the USA and South Korea.

Dr. Ning XU of the Institute of Tea, Chinese Academy of Agricultural Sciences received his Ph.D. degree early this year in Hangzhou, Zhejiang Province. He is the third Ph.D. recipient on tea science in China, and his dissertation is about the chemical effects of volatile materials on nutrient relationships among tea-tea caterpillar-*Apanteles*.

Shifu ZHAO, a Ph.D. candidate in the Department of Entomology at West Virginia University since 1994, recently received the Andrew Hopkins Scholarship from the University. Mr. Zhao earned his B.S. in 1985 from Jiangxi Agricultural University, M.S. in entomology in 1988 from Fujian Agricultural University (major professor Zhongfu WU). In 1995, he attended the Acarology Summer Program at Ohio State University (OSUASP) as a recipient of the Harry Hoogstraal Scholarship. Currently, he is working on the biology and diversity of eriophyoids and biocontrol of multiflora rose under the supervision of Dr. James W. Amrine. Mr. Zhao is particularly interested in the dispersal biology of mite vectors of plant diseases and in improving management of the rose rosette disease for the control of the weed.

Fellowships for Research on Mite Taxonomy: Three Fellowships are available in 1997 from the *International Journal of Acarology* for research on mite taxonomy in different parts of the world. The Fellowships are named in honor of three acarologists who have contributed a great deal to the development of acarology. The research work must be on mite taxonomy, and must be published in IJA. Persons interested in a Fellowship grant should apply before May 1, 1997 to the International Journal of Acarology, P. O. Box 250456, West Bloomington, Michigan 48325-0456, USA. Applicants are required to send a letter of intent,

a resume, and a recent photo, if available. Selection of candidates will be made as soon as applications or letters are received.

E. W. Baker Fellowship - $1, 000, for taxonomic research on plant-associated mites of the Philippines; preference to be given to a native acarologist; work may be done under the guidance of Dr. E. W. Baker/Dr. M. Delfonado-Baker. An additional funding of $1,000 will be provided to the selected participant by Dr. M. Delfinado-Baker in honor of her husband.

D. A. Chant Fellowship - $1,000, for taxonomic research on plant-associated mites, preferably Phytoseiidae in Canada.

G. W. Krantz Fellowship - $1,000, for taxonomic research on mesostigmatid mites under guidance of Dr. Krantz in Corvallis, Oregon, USA.

CHOU Io (ZHOU Yao) Insect Taxonomy Research Fund was established in Ningbo City, Zhejiang Province in 1996. Professor Chou, born in Ningbo, is a famous insect taxonomist at the Department of Plant Protection, Northwestern Agricultural University in Shaanxi Province. The fund will be used to award young entomologists in the research institutes and universities in China.

International Journal of Acarology and Indira Publishing House on World Wide Web: Now you can visit Indira Publishing House and the International Journal of Acarology on the World Wide Web at http://www2.ix.netcom/ŸV.Prasad/IndiraPublishingHouse.html for more and recent information about IJA and the publications of Indira Publishing House. Also, you can now place orders directly from Indira Publishing House by writing to e-mail: V.Prasad@ix.netcom.com for fast delivery of books and journals. In addition, authors are encouraged to submit articles via e-mail to speed up the publication process. Instructions for transmitting articles via this mode are published in the inside cover of IJA.

Zongli HOU et al. reported that the nucleotide and deduced amino acid sequences of the protein E of TBEV (tick-borne encephalitis virus) HLJ-1 from northeastern China were compared with those of Neudoerfl strain and Sofyn strain. HLJ-1 and Sofyn shared 94.3% homology in the nucleotide sequence and 98.8% homology in the amino acid sequence. (Chinese Journal of Virology, 13(1): 47-53).

Obituary Notice: Two outstanding Russian acarologists passed away: Dr. Nina G. Bregetova, Zoological Institute, St. Petersburg, on June 12, 1996 at the age of 83 years, and Dr. Alexander B. Lange, Moscow Government University, on October 17, 1996 at the age of 75 years. Our condolences go to their families and friends.

New Books

An Illustrated Guide to Mites of Agricultural Importance. By Zhang, Z.-Q. & Liang, L.-R. (1997) Shanghai, Tongji University Press. ISBN 7-5608-1859-5/s.8. 228 pp. Hardcover. (in Chinese with English captions; ca. 190 pages of illustrated keys with Chinese and English bilingual descriptions).

Hydrachnellae-Morphology, Systematics and a Primary Study of Chinese Fauna. By Jin, Daochao (1997) Guizhou Science and Technology Publishing House, Guiyang, RMB 48yuan. 356pp. ISBN:7-80584-459-2/S.100. In Chinese with English abstract.

The Economic Insect Fauna of China is a series of books covering the insect and acarine fauna in mainland China. Fifty-five volumes have been published so far. Among these books, volumes 15, 17, 23, 39, 40, 44 and 53 are on Ixodoidea, Gamasina,

Tetranychoidea, Ixodidae, Dermanyssoideae, Eriophyoidea(1) and Phytoseiidae respectively. Anyone interested in mainland acarine fauna can contact Science Press (zip code: 100717, Beijing) for buying books.

Book Reviews

The Eriophyoid Mites of China: An Illustrated Catalog and Identification Keys (Acari: Prostigmata: Eriophyoidea). By Xiaoyue Hong and Zhi-Qiang Zhang, 1996. Volume 7. Memoirs on Entomology, International, Gainesville, Florida: Associated Publishers. 318 pp. ISBN: 1-56665-062-3. ISSN: 1083-6284.

This book was the result of a collaboration when the senior author was a Darwin Fellow at the International Institute of Entomology, London, and it was produced in less than a year, a very impressively short time. The main sections include the catalogue, keys, and illustrations; there are also an introduction, acknowledgment, reference list, and two indices.

The Introduction briefly summarises the economic importance of the Eriophyoidea and the history of their study in China, including a list of contemporary Chinese acarologists interested in eriophyoid research. It gives information on the number of genera and species in each subfamily (Table 1), and the number of species from either or both of the Palaearctic and Oriental regions in China (Table 2). The format of the catalogue is explained here: it includes species name, author(s), and year of publication, full title of the journal or book, type locality and deposition if known, other taxonomic references, habit, host plant(s), and distribution.

The Catalogue section includes 205 species in 3 families, 9 subfamilies, and 77 genera. It is arranged alphabetically within each subfamily. It would have saved some space if the full title of the journal or book in each entry had not been cited repeatedly, as this information can be found in the reference list. However, this is a comment rather than a criticism; a similar format is used in the series of zoological catalogues published by Australian Biological Resource Study.

A single key to families, subfamilies, tribes, genera and species is provided, and for the important genera and/or the genera with many species, such as *Aceria*, separate keys to species are provided. The keys might have been more user-friendly had the figures been referred to whenever appropriate; but these are lacking. More than 200 references are listed and I believe this to be a very comprehensive coverage. Illustrations are provided for 190 species, and occupy the greater part of the book. They were redrawn and/or modified from earlier publications, and the sources are cited. Illustrations for each species are arranged onto one page. The book ends with an index to mite taxa and an index to hosts.

This is a very valuable book for agricultural entomologists, quarantine officers, acarologists, and, in particular, those with a special interest in eriophyoid mites.

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Eriophyoid Mites: Their Biology, Natural History and Control. (1996) Edited by Lindquist, E. E., Sabelis, M.W. & Bruin, J. Elsevier, Amsterdam, The Netherlands. ISBN: 0-444-88628-1. US$300.00

This book is a timely compilation of synthesized information on economically important eriophyoid mites. It is volume 6 in the series on world crop pests, whose editor-in-chief is Professor W. Helle. This book is a

comprehensive and the best guide to eriophyoid research.

This multiauthored volume is generally organized into four parts. Part I treats the Eriophyoidea themselves, including external anatomy and notation of structure, systematics, diagnoses for major taxa, keys to families and genera, nomenclatorial problems, internal anatomy and physiology, morphogenesis and cytogenetics; biology and ecology; evolution and phylogeny, and field and laboratory techniques for their scientific study. Part II deals with the natural enemies of eriophyoid mites, including Phytoseiidae, Stigmaeidae as well as other predatory arthropods and pathogens. Part III begins with an account of the nature of damage by eriophyoids and its assessment, followed by a series of 14 sections introducing eriophyoid pest problems and their control in citrus, apple and pear, other fruit trees and nut trees, coconuts, grape, currants and berries, vegetables, corn and grain plants, grasses, sugarcane, coffee and tea, ornamental and flowering plants, flower bulbs, ornamental coniferous and shade trees, and forage crops. Host resistance and pesticide resistance in eriophyoids are also briefed in this part. Part IV presents the beneficial effects of eriophyoid mites, including biological control of weeds and beneficial effects on other plants. The book ends with a general index including predators, pathogens, and high taxa of eriophyoid mites, an index of eriophyoid mites and an index of host plants.

The book has several remarkable features. Firstly, it is up-to-date in many aspects. New nomenclature and notation in the book clarify problems in the Eriophyoidea, the notation of which were not consistent with those of other superfamilies in the Acari. New taxonomic system with illustrated keys based on intensive research provides new convincing tools in identifying eriophyoid mites. New mounting methods developed by Dr. Amrine and Dr. Manson works well for eriophyoids and resolves the problem of longevity. From sperm transfer mechanisms, sex determination mechanisms, postembryonic development, suppression of anamorphosis and other comparisons, Dr. Lindquist shows that the Eriophyoidea has a sister relationship with the Tydeoidea, which will enhance readers' understanding of the eriophyoid mites and their sister groups from a new point. Internal anatomy and physiology, diversity and host specificity, feeding effects, beneficial effects of the eriophyoids and so on illustrate the newest knowledge in the fields, broadening the view of readers. Some parts have never been introduced before. New views are also presented to stimulate interest in eriophyoids and their enemies. Secondly, it is systematic in structure. The book not only introduces the basic knowledge in anatomy, behaviour, ecology and even systematics, which helps readers' understanding the ways of life of these mites and their effects on host plants, but also deals with the applied knowledge in economic eriophyoid mites damaging crops, fruits, vegetables, ornamental plants and so on. This kind of arrangement is very helpful for students and teachers in plant protection. Thirdly, it is very comprehensive. In the last two years, several works on the Eriophyoidea were published (Amrine, 1996; Baker et al., 1996; Hong & Zhang, 1996; Kuang, 1995); all are on world fauna or regional fauna, and are especially useful for taxonomists. While in this book, almost every aspect of the Eriophyoidea has been introduced. This will meets the needs of extension workers, experts of acarology, plant protection as well as students, teachers and researchers. Last, but not the least, the elegant printing and beautiful binding will certainly enhance the commercial value of the book.

Although overlapping can be found in different chapters of this book and high price will restrict its sale in developing countries, it is still a very good book and will serves as a very useful guide to people who are interested in the Eriophyoidea.

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Principles of Plant Acarology (in Japanese). Edited By Ehara, S. & Shinkaji, N. (1996) Zenkoku Noson Kyoiku Kyokai, Tokyo, 6500 Yen. viii+420 pp.

There has been a lack of comprehensive books on plant mites since *Mites Injurious to Economic Plants* (Jeppson et al. 1975) in the West (especially in the English speaking world). In the East, however, quite a few such books have been published in China (Jiangxi University 1984; Kuang 1986; Xin 1988; Zhang & Liang 1997) and Japan (Ehara 1983; Ehara & Shinkaji 1996). Very unfortunately, these books are often unknown to acarologists in the West.

Principles of Plant Acarology is the joint effort of 14 Japanese acarologists. It is the most updated and comprehensive review of plant acarology in Japan. Published in 1996, this book includes literature as recent as 1994.

The book consists of six chapters. Ehara gave a general introduction in chapter 1. A distinction between plant acarology and agricultural acarology was made: the former deals with plant mites in general, whereas the latter deals with mites of agricultural crops. This chapter includes a brief summary of mite morphology, taxonomy and general biology, and an account of the history of plant acarology in Japan and in the world.

Spider mites (Tetranychoidea) were reviewed in chapter 2, the longest chapter (with 183 pages) in the book . After a review of the external morphology and internal anatomy, Ehara provided a systematic account of Japanese Tetranychoidea, with keys to families, subfamilies, genera and species, a diagnosis of each of which was also given, together with distribution and host data. Tetsuo Gotoh and Akio Takafuji reviewed the life history of spider mites, with a relatively long account of their diapause. Yutaka Saito discussed various behavioural aspects of spider mites, with an interesting account of the life-types of spider mites living in webbings, including several original photos and drawings. Masahiro Osakabe reviewed the physiological and biochemical studies on spider mites, focusing on Japanese literature. Hiroshi Amano described insect and mite predators of spider mites as well as acarophagous microorganisms. Spider mite damage and forecasting were discussed by Kaichi Furuhashi. Shinkaji ended this chapter with a review of spider mite control.

Chapter 3 is an account of Japanese eriophyoid mites by Fujio Kadono. The section on the morphology and taxonomy of eriophyoids is similar in structure to that of the last chapter. Unlike most eriophyoid workers, Kadono recognised four families (Nalepellidae, Phytoptidae, Eriophyidae, and Diptilomiopidae) in the Eriophyoidea. His discussion on the ecology and control of these mites is short but informative.

Two of the most important families of predatory mites, Phytoseiidae and Stigmaeidae, were covered in chapter 4. Ehara described the morphology and taxonomy and Hiroshi reviewed the ecology and use in biological control of these two group of mites.

The rest of the plant mites were covered in chapter 5. The morphology, life history and control of the Tarsonemidae were reviewed by Yasuhiro Ito; only five common species were introduced. Norio Itagaki provided a brief account of the ecology of the Eupodidae and its damage on plants. Plant-associated Astigmata (Acaridae) were covered in a section by Hiroshi Nakao, who provided a brief review of the morphology and ecology of these mites, and the diagnoses, distribution and damage of six common species. Jun-ichi Aoki ended this chapter with a synopsis of Japanese Oribatida on plants.

Chapter 6, the final chapter, is a description of various experimental methods for studying plant mites: collecting and preparing mite specimens (Saito); rearing mites (Gotoh & Amano); tests of pesticides (Tetsuzo Hamamura).

There is a full list of cited literature of 52 pages, a subject index in Japanese and a subject index in English, a taxonomic index in Latin, a taxonomic index of zoological names in Japanese and a taxonomic index of plant and microorganism names in Japanese.

The editors are to be congratulated for putting this volume together. I have no hesitation in recommending it to acarologists in China and elsewhere. This book will be an useful reference for many years to come.

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Prof Jim Amrine, Jr. (USA)

Current contents of acarological journals

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