

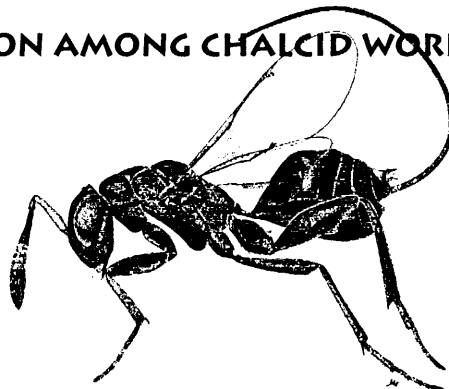
# CHALCID FORUM

A FORUM TO PROMOTE COMMUNICATION AMONG CHALCID WORKERS

Volume 20. December, 1997

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(see Research and Documents)



## Editor's Notes

Welcome to the 20th edition of Chalcid Forum. With this issue we inaugurate full e-mail and world wide web editions (see web address above) of CF. Those of you who responded to our entreaty in CF 19 will have received notification of this issue via e-mail. We hope that more of you will take advantage of this means of distribution since it saves substantial time and money. We thank Chris Desjardins for his input in this issue. The masthead for this issue is of *Palachia caudata* Boucek (Torymidae) drawn by Mary Lou Cooley (Systematic Entomology Lab., retired).

## Research News

### Badrul Amin Bhuiya

Professor Department of Zoology University of Chittagong

I have spent more than a year at the Natural History Museum, London, from July 1995 to October 1996 under a link research project on Hymenoptera systematics. Besides my work on Ichneumonoidea I have worked on Chalcidoidea attacking guava coccoids from Bangladesh. A paper on "An annotated list of chalcidoid parasitoids attacking guava coccoids in Bangladesh" is going to be published in Bangladesh Journal of Zoology, vol. 25(1) of 1997 which is in press now. I am interested in research cooperation with chalcidologists from around the world.

### Lütfiye Genger

Cumhuriyet Üniversitesi, Sivas, Turkey

I work at the biology department, Cumhuriyet University, Sivas as a senior lecturer. I have worked with Chalcidoidea for my Ph.D. thesis under supervision of Prof. Dr. Miktat Doganlar who is currently working in another university in southern Turkey. The subject of my Ph.D. thesis was systematical and faunistic investigations on some Chalcidoidea species. I am still working with Chalcidoidea with interests in Torymidae and Omyridae.

## Trips

### A Bodacious Brownsville Bonanza

by Michael Gates, Department of Entomology,  
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My two week trip from Riverside, California to Brownsville, Texas and back began at 6:00AM on the morning of July 15, 1997 as I departed Ontario International Airport in a rented Pontiac Sunfire. The goal of this trip was to obtain fresh material of three species of *Rileyia* (Eurytomidae) described from Brownsville that were poorly represented in the UCR Entomology Collection and had not appeared in borrowed materials. Herein, I shall provide the highlights of my quest for my personal Holy Grail on a day-to-day basis.

Day 2: I'm in time to catch the last dregs of blooming *Chilopsis linearis* and *Prosopis* sp. at the mouth of Gardener Canyon and manage to scrounge some common eulophids, pteromalids and a nice series of large eupelmids. My next stop, a wash east of Gleeson, yields a few nice chalcidids and eulophids. Interestingly, only one thorny *Tetradymia*?-like shrub is blooming and it is positively swarming with Hymenoptera. Although I pull a few chalcidoids, the majority of the catch is Sphecidae. By now, the temperature is over 100°F, thunderheads are building to massive size and I find myself on Geronimo Trail heading for Guadalupe Canyon (extreme SE Arizona). The canyon is dry but *Bumelia* sp. and *Acacia constricta* are blooming and provide a nice sample of 'doids. Tonight, I feast on beef stew and have excellent collecting at the MV light. I am privy to the struggle of life as I witness a tunneling spider get repulsed by the hot spray of a Bombardier beetle—an effective defense indeed!

Day 3: Groggy, I come within 6 inches of interrupting a 3' Blacktail rattlesnake as I have a morning walk in the wash. Fortunately, he is effectively oblivious to my blundering due to a recent avian meal. I leave at 8:30AM

by continuing east on Geronimo Trail through the southernmost piece of the Coronado National Forest. The area is beautiful canyonland covered in oak, juniper, pine, sycamore, willow, etc. but the road gets a bit rough and puts my Sunfire through its paces. The left rear tire, not surprisingly, develops a slow leak which I stop to have repaired in Deming, NM. On my way through El Paso, I refill my dry ice supply at an easily located local ice vendor (Insert shameless plug for DeLorme's Texas Gazetteer here). I spend the evening camping at the beautiful Davis Mtns. State Park.

Day 4: I head out of the park on highway 90 toward Del Rio, Texas. About 5 miles west of Sanderson, I stop at a small drainage ditch to collect. The area turns out to be phenomenal!! A large number of unidentified annuals are in full bloom as well as *Centaurea* sp., *Mirabilis* sp., and Mexican hats. Many shrubs like *Larrea* sp. and *Prosopis* sp., although done blooming, are quite lush. Of course, Chalcidoidea are thick as I collect several hundred specimens in about 1.5 hours. Dozens of butterflies are actively nectaring: 3 spp. of Papilionidae and 2 spp. of Nymphalidae. At least 2 spp. of cicada are abundant and boisterous. Reluctantly, I depart for my target: Falcon Lake. I pass through Laredo and am unimpressed. Falcon Lake is not much better as all campsites (I stay at an RV site) are closed and a stout southeasterly wind impedes my tent set-up efforts. I go to sleep after guzzling a few beers and inhaling some beef stew.

Day 5: Strong winds speed me on my way to Bentsen-Rio Grande State Park for an early 10:30AM arrival. I check in at park headquarters and am immediately assaulted by the high humidity and monstrous chorus of cicadas. I proceed to the Rio Grande Trail and sweep grasses, *Celtis* sp., *Pithecellobium* sp., blooming *Prosopis* sp., etc. as I hike to the river. I'm surprised to find eupelmids, podagriines, *Orasema* sp. and *Eurytoma* sp. among others. I anxiously search for mounds of *Atta texana* after I see evidence of their handiwork and a worker trapped in a mesquite sap flow, but no luck. By the time I reach the car, I'm saturated with sweat. I later learn that the high was 101°F with 85% RH. Next, I take the Singing Chaparral Trail, but the collecting is not as good although the cicadas' singing would be agonizing were it not for selective attention. After a much needed shower, I eat supper and gaze across the river to Mexico. From 1:30 AM to dawn, I am assaulted by a local myrmicine (*Solenopsis* sp.?) as I try to sleep. After getting the hell stung out of me for 5 hours (at least two dozen individual attacks), I zip up the remaining several hundred ants in my tent and place it in the sun. Revenge is a dish best served hot (petty, I know).

Day 6: I leave for Brownsville at 8:30AM and stop at an abandoned field on the west side of town off of highway 83. SUCCESS!! I collect adult *Rileyia* (*R. heterogaster*, *R. similis* and, hopefully, *R. compressiventris*) on lead tree, *Leucaena pulverulenta*, growing in the lot and collect rearing material (~500) in

the form of *Asphondylia* sp. floret galls from the same. Apparently, each developing ovule in an inflorescence is oviposited into by the fly causing the ovule to become a deformed, teardrop-shaped gall. Up to 15 of these galls were observed attached to a single receptacle and those opened in the field revealed either cecidomyiid maggots or lepidopteran larvae (inquiline?). The field was carpeted by Bermuda grass and also had *Acacia*, *Parkinsonia aculeata*, *Pithecellobium* sp., *Salix* sp., *Helianthus* sp. and a blooming Convolvulaceae vine, all of which yielded a fantastic 'doid sample: 2 spp. of eupelmids, beautiful golden chalcidids, many encyrtids, mymarids, eulophids, and pteromalids (*Eutrichosoma* sp.!). All of these went on dry ice immediately. Giddy with success, I proceed to the Sabal Palm Sanctuary where I was greeted and assisted by the superior staff there. The collecting was excellent again along the park trails: one to a moist meadow and the other to the river. I collected more *Rileyia* spp. (on *L. pulverulenta*), chalcidids, encyrtids (grasses), eulophids and *Orasema* sp. (on blooming *Acacia* sp.). I got a taste of heaven by staying in Motel 6 where I did wash and slept in formicid-free, air-conditioned comfort.

Day 8: I was tormented again in the night by hell-bent myrmicines that somehow arrived between my back and ground pad despite the latter being stuck to me like a second skin. Weary, I resisted the temptation to again convert my tent into an ant incinerator and just left for College Station. Arrive at 1:30PM and proceed to the museum at TAMU where I meet Ed Riley. He set me up to sort out their Rileyinae and identify some miscellaneous eurytomids.

Day 11: I leave my desert campsite near Carlsbad Caverns, New Mexico by 8:00AM and travel south on the 62/180 through Guadalupe National Park, which is fantastic! I continue on through El Paso back into New Mexico where I turn south onto highway 80 west of Lordsburg and stop ~15 miles north of Rodeo at some granite formations that had been cut into three masses by wind and water. There is some blooming *Acacia constricta* in the "washes" along with a bit of *Larrea* sp.

### Chalcid Forum

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and *Opuntia* sp. The *Acacia* yields a nice series of *Tanaostigma stanleyi*, *Orasema* sp. and a few *Perilampus* sp. I decide to head for Guadalupe Canyon on my return as rain appears to be falling in the area. I make it to the canyon's corral by 7:00PM and rain has indeed fallen as the soil is wet to ~ 3/4" and it continues to fall sporadically from overcast skies. MV lighting is great for beetles and light rain finally stops at 11:00PM. I must battle the mold that threatens to destroy the *Asphondylia* sp. (and my *Rileya* spp. !!) galls from Brownsville by treating ~100 with an EtOH bath. It appears that my fungal fighting will last throughout the trip.

Day 13: On this, the final night of my trip, I am treated to a magnificent sunset that turns the entire landscape near the Baboquivari Mountains in southern Arizona golden yellow as the sun peeks under the clearing western clouds. A massive double rainbow forms to the east as the western sky fades to deep crimson and violet.

## Books

**Annotated Keys to the Genera of Nearctic Chalcidoidea (Hymenoptera).** Gary A. P. Gibson, John T. Huber and James B. Woolley (Eds.). NRC Research Press, Ottawa, 1997. xi+794 pp. Price: Canada CAN\$ 64.95, other countries US\$ 64.95 (hardcover). ISBN 066016669-0.

It has been said that it is dangerous to study the Parasitic Hymenoptera, for those who do are inclined to become alcoholics or end up in mental institutions. Notions of such despair undoubtedly stem from the daunting task that confronts those who venture to unravel the identity of this vast and taxonomically complex assemblage of enigmatic wasps.

The superfamily Chalcidoidea alone comprises close to 19,000 valid species in 2,000 genera, with estimates of the actual number of species ranging from between 60,000 to 100,000 world wide. Compounding the difficulties in coming to grips with the identity of this bewildering array of mostly poorly known taxa is the plethora of scattered and often inaccessible descriptive literature spanning some 200 years of taxonomic endeavour on the group. The task is made even more arduous by a shortage of essential identification tools such as modern catalogues, revisions, keys and adequately documented reference collections. In Britain, arguably the cradle of Chalcidology, there are for instance no modern identification keys for more than half of the 5,000 or so species of Hymenoptera (Weeks et al., 1997. *Bull. ent. Res.* 87: 203), many of which belong to chalcidoid groups.

What is clearly needed, is to take stock of what is known, collate and synthesise the vast pool of scattered knowledge, much of which is buried in a few inquiring minds, and make it readily accessible in such a way that it is both palatable and of practical value to all. Indeed, this

is not only imperative in giving credence to the ideals of the Convention on Biological Diversity, but also in proving the worth of insect systematists in a world of changing attitudes to science.

The 17 authors of *Annotated Keys to the Genera of Nearctic Chalcidoidea* receive full credit for having done exactly that. In harnessing their collective skills to the full they have produced an outstanding synopsis of the 19 families and 706 chalcidoid genera known to occur in the region. But the true value of this book lies far beyond that of a manual merely for identifying specimens. It is also an impressive reference work, crammed with invaluable nomenclatural, bibliographical and host information on the Nearctic chalcidoid fauna.

The book comprises 22 chapters. The introduction, which contains interesting background information on the history of Chalcidology in North America, numbers of taxa and the rate at which genera have been described from the region through the years, is followed by a chapter on morphology. Morphological terms pertaining to the keys and various family diagnoses are conveniently highlighted in bold, clearly explained and depicted in a series of uncluttered line drawings and good quality scanning electron micrographs. For quick reference, terms are listed alphabetically in a separate appendix with their abbreviations and reference to figures. A second appendix cross-references the abbreviations with terms. The disadvantage of having this information separate, and not in figure legends below the plates, is that some paging is required to determine the meanings of the abbreviations depicted in the illustrations.

Chapter three provides, besides a key to families, an overview of the Chalcidoidea and covers topics such as recognition of the group, mode of parasitism (feeding types), host ranges and relationships, behaviour, collecting methods and voucher specimens. Written in clear language, this is essential reading matter which should appeal in particular to the non specialist seeking general background information on the superfamily at a glance.

The family key is primarily a derived combination of those found in *A Handbook of the families of Nearctic Chalcidoidea and Hymenoptera of the World*. In recognizing 19 families, the authors have opted for the traditional system of classifying chalcidoids at this level. Considering the intended purpose of the book and the instability of the higher classification of these wasps, in which anything from nine to 24 families have been recognized, this is a sensible choice.

Preceding the key is a flow chart which gives a pleasing visual impression of how the 19 families are keyed out in the 40 couplets. The key itself is visually less pleasing. Placing the figures associated with each alternate of a couplet directly above it allows for easy comparison between figures and text, but often results in insufficient space for both alternates on the same page. Consequently, many pages are left with unsightly blank spaces, while the alternates of some couplets appear on different pages,

making comparisons somewhat cumbersome. More important though, is the fact that the key works well. Evidently, much careful thought has gone into making it both accurate and workable for the novice and specialist alike. Chosen for diagnostic reliability rather than convenience, the characters are not necessarily "easy" to use, but being appropriately and clearly illustrated there should be no problem in keying specimens out.

The bulk of the remaining text is devoted to the family treatments. Each of the 19 chapters reviews one family and includes, apart from a generic key, sections on its recognition, systematics, biology, fauna and literature. For larger families a useful index to genera based on couplet numbers is also included. These topics are all well covered, serving as a concise and informative introduction to the 19 families as represented in the Nearctic region.

In essence, this book is all about generic keys to Nearctic chalcidoids, and its real value will ultimately be judged by how well these keys perform. So I decided to put some of them to the test, selecting specimens not only from the Nearctic region, but also from further afield. The results were excellent, bearing testimony to the skilful and competent way in which these keys have been constructed. The contents of the couplets are unambiguous and the taxonomic language easy to comprehend. I was pleased to see that the authors have, in all but one of the tested keys, managed to avoid using the handy but dreadful "either/or" method of separating taxa. All of this adds much to the relative ease with which the user is guided through the keys, even in the case of genera which are difficult to define. Although these keys have been designed specifically for the Nearctic region, they will, if used with the necessary insight and care, also serve as a very useful tool in the study of extra-limital forms, as was evident from the large selection of Afrotropical specimens which keyed out perfectly well. Greatly enhancing the value of these keys are brief annotations to each genus comprising references to existing species keys, estimated number of species, known distribution and host range in the region.

The use of the keys is facilitated by 1,880 line drawings and scanning electron micrographs which, despite the inputs from a variety of illustrators, are of a consistently high aesthetic and technical standard. With the intended readership of the book in mind, a few more eye-catching habitus drawings, which are completely lacking for some families, would have added a special touch.

The book concludes with four very useful indices. The first one comprises about 130 generic and subgeneric chalcidoid names (with their nomenclatural fate) which have become invalid since publication of the most recent (1979) edition of *Catalog of Hymenoptera in America North of Mexico*. Following this index are separate lists of plant and animal hosts, and supraspecific chalcidoid names.

In summary, I applaud the contents of this book, hence the lack of any serious criticism. Naturally, this is not the last word on the supraspecific identity of Nearctic

chalcidoids, for our knowledge and understanding of the fauna is far from complete. But the authors have succeeded admirably in synthesising what is presently known while providing an excellent framework for further revisionary work on the group. I recommend this book as an indispensable reference and identification tool for anyone, specialists and generalists alike, involved in the study of parasitic wasps.

**Review by: Gerhard Prinsloo, Biosystematics Division, ARC-Plant Protection Research Institute, Pretoria, South Africa.**

## Collections

### The status of Hymenoptera collection at the Institute of Zoology, Kiev, Ukraine.

M. D. Zerova and V. N. Fursov

Research on Hymenoptera in the Institute of Zoology of National Ukrainian Academy of Sciences is concentrated in two Departments: Department of Taxonomy of Entomophagous Insects and Ecological Principles of Biological Control (Chalcidoidea, Ichneumonoidea, Proctotrupoidea, Cynipoidea, Formicoidea, Head-Prof. M. D. Zerova), General and Applied Entomology (Apoidea, Sphecoidea and Symphyta, Head - Prof. V. G. Dolin). The following specialists are working on Hymenoptera: Prof. M. D. Zerova (Eurytomidae, Torymidae, Ormyridae), Dr. V. N. Fursov, (Trichogrammatidae, Mymaridae), Dr. L. A. Seryogina (Torymidae), Dr. O. V. Chervonenko (Aphelinidae), Dr. A. G. Kotenko (Braconidae), Dr. V. I. Tolkanits (Ichneumonoidea), Dr. S. V. Kononova (Proctotrupidae), Dr. A. G. Radchenko (Formicidae), Mr. A. V. Gumovsky (Eulophidae), Dr. A. Z. Osychnyuk (Apidae), Dr. L. S. Romasenko (Megachilidae), Dr. V. M. Ermolenko (Symphyta). The results of systematic and faunistic research are about 5000 parasitic and predeceous Hymenopterous insects which were indicated from the territory of the South-West of the former Soviet Union (incl. Ukraine, Moldavia and European part of Russia). The fundamental collection of some groups of entomophagous and phytophagous Hymenoptera was established mainly for the Palaearctic region, including Ukraine, European part of Russia, Siberia, Russian Far East, some West European countries (Hungary, Romania, England, Ireland, Italy, Sweden, Denmark), Caucasus (Georgia, Armenia, Azerbaijan), some other states of former USSR (Tadzhikistan, Uzbekistan, Turkmenia, Kazakhstan and Kirgizia) and Asia (Vietnam, Japan). The great collection of old types of Formicoidea from tropical regions which was created by Dr. V. A. Karavaev are also kept at the Institute of Zoology, Kiev. The preliminary numbers of various families of Hymenoptera in the collection of Institute of Zoology, Kiev are indicated in Table 1. The collection of Apoidea and Symphyta is mostly pinned,

Chalcidoidea and other groups are mostly dry, card-mounted and glass slide-mounted, and also partially stored on cotton layers and smaller number in alcohol. Total number of Hymenoptera: genera-967, species-8467, species with type's individuals-1610, species with holotypes-706, mounted individuals - 285,810, unmounted individuals-387,200. On the basis of the collections several volumes of publications in the series "The Fauna of Ukraine" (Kiev, Naukova Dumka Publisher) were published: Eurytomidae (Zerova 1978), Phytodietini and Metopiini (Tolkanits 1981, 1987), Scelionidae (Kononova 1992).

In the series "Identification keys of insects of European part of the USSR" (Ed.G.S.Medvedev, Leningrad, Nauka Publ.) the parts on Eurytomidae, Torymidae, Ormyridae (Zerova 1978) and Braconidae (Kotenko 1978) were published.

In the series of "The Fauna of USSR" (Moscow, Leningrad, Nauka Publ.) 2 books were published: on Eurytomidae, subfam. Rileyinae and Harmolitinae (Zerova 1976), on Telenominae (Kononova). In the series of "Identification keys of insects of Russian Far East" (Ed. P. A. Ler, Vladivostok, Dal'nauka Publ.) the parts were published: on Eurytomidae (Zerova 1995), Torymidae (Zerova & Seregina 1995) and Scelionidae (Kononova 1995).

PRELIMINARY LIST OF HYMENOPTERA IN THE COLLECTION OF INSTITUTE OF ZOOLOGY OF NATIONAL UKRAINIAN ACADEMY OF SCIENCES, KIEV

Taxa	# of genera.	# of spec. & intra-spec.. forms	# of species w / type's indiv. & holotypes	# of mounted specs. in collect.	Approx. # of un-mounted specs. (layers.alc)
<b>PARASITICA</b>					
Leucospidae	1	2	0	30	100
Eucharitidae	2	2	0	20	*
Chalcididae	7	9	0	100	*
Perilampidae	3	9	0	50	*
Elasmidae	1	3	0	30	*
Eupelmidae	3	4	0	50	*
Encyrtidae	16	176	1/0	400	*
Pteromalidae	85	180	5/3	500	10000
Eulophidae	92	300	15/15	1000	2000
Eurytomidae	20	400	164/100	64800	50000
Ormyridae	1	19	7/7	2000	1000
Torymidae	22	159	45/45	8000	10000
Trichogrammatidae	25	200	28/1	1000	10000
Myariidae 15	100	1/0	500	3000	
Sygniphoridae	2	3	0	30	100
Aphelinidae	6	100	3/3	1000	5000
Braconidae	120	800	72/30	60000	50000
Ichneumonidae	103	1182	185/46	60000	50000
Cynipidae	27	148	38/38	4000	5000
Proctotrupidae	20	200	*/*	30000	50000
Scelionidae	47	590	515/400	10000	10000
Diapriidae	40	200	0	500	500
Sub-total	658	4786	1077/688	244010	256700
<b>ACULEATA</b>					
Formicidae	284	2700	533/18	60000	70000
Apoidea	*	*	*	60000	*
Megachilidae	20	129	0	3100	500
Apidae	*	52	*	2500	*

Colletidae	*	79	*	2800	*
Andrenidae	5	463	*	40000	*
Halictidae	*	165	*	10000	*
Melittidae	*	12	*	400	*
Anthophoridae	*	181	*	3000	*
SYMPHYTA	*	*	*	50000	50000
All Total	967	8467	1610/706	285810	387200

\* - number not counted (all numbers provided by specialists on these groups).

## Recent Literature

Compiled by John Huber

(from 1 July, 1996- 1 September, 1997, a few 1994, 1995, and 1996 included)

All titles and journal abbreviations should be checked by the reader for accuracy if they are to be quoted in scientific papers. Strictly taxonomic references are marked with an asterisk (\*). **Noteworthy publications:** Gibson, G.A.P. et al. 1997; Quicke, D.L.J. 1997.

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#### Missing Persons

The last issue of Chalcid Forum sent to the following people were returned. If you know the correct address for these folks, please let us know.

John Ruberson (USA)  
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 L.P. Rozanov (Uzbekistan)  
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Male of an undescribed species of *Euplectrus* (Eulophidae) from Costa Rica (SEM by T. Carlow and M. Schauff).

# The Works of A. A. Girault: Chalcidoidea

**Compiled by Michael E. Schauff**

Systematic Entomology Lab., USDA, National Museum of Nat. Hist., NHB 168,  
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A. A. Girault was one of the most prolific authors of taxonomic works on the Superfamily Chalcidoidea (Hymenoptera). From about 1900 until his death in 1942, Girault published over 450 papers, the vast majority of which dealt with descriptions of species of chalcids. The sheer volume of this work has made Girault's papers among those most often consulted by workers today. Working in the U.S., and for many years in Australia, Girault published at a frantic rate sometimes authoring 15-20 papers in one year. Many of these were published in obscure journals and, at times, he even published his works privately. As a result, many of these papers are very hard to locate and there are only one or two institutions in the world with complete collections. An added problem is that many of the older papers were printed on poor paper and are now deteriorating.

This CD-ROM contains over 380 of Girault's works, indexed by year, on Chalcidoidea in Adobe Acrobat™ format. Each paper can be viewed and printed on a local PC using the free Acrobat Reader. It has been formatted for PC and Macintosh for MacOS, Windows95, and Windows NT4.0. Other operating systems have not been tested.

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**Canberra Australia**

**6-11 January 1999**

***A mailing will be forthcoming in early 1998 to all members of the Society. Non-members who are interested in attending or receiving information about the scientific program should contact the meeting organizers at: 4th International Hymenoptera Conference, c/o CSIRO, Division of Entomology, P.O. Box 1700, Canberra, ACT 2601 Australia (fax 61-6-246-4264; e-mail iann@ento.csiro.au).***

**ISH now takes credit cards (Visa or MasterCard)!! Contact the Secretary for a membership application (Jim Woolley, Dept. of Entomology, Texas A & M Univ, College Station, TX 77843 (jimwoolley@tamu.edu)).**