

Chalcid Forum

A Forum to Promote Communication
among Chalcid Workers

Volume 26, November 2004

Edited by: M. Gates, E. E. Grissell, and Michael Schauff

Send Submissions /Correspondence to:
Systematic Entomology Lab., ARS, USDA
P.O. Box 37012, CE520, MRC 168
National Museum of Natural History
Washington, DC 20013-7012
e-mail: mgates@sel.barc.usda.gov; egrissel@sel.barc.usda.gov;
mschauff@sel.barc.usda.gov;

Note from the Editors

Here we are again. You thought perhaps we had forgotten your thirst to be kept apprised of all things chalcidological? We have been delayed this year, but hope to get back on schedule next year and get an Issue out by June and work back to a spring release for Chalcid Forum 28. You, the readership, can help us in this effort by setting aside some time over the holidays to put together relevant technical, semi-technical, or non-technical contributions proactively. Otherwise, we will continue with our pro forma policy of browbeating in an effort to "share the pain". —The Editors

Necrology of Mike Rose

After battling pneumonia at his home in Livingston-Montana for over a month, Mike Rose passed away on Monday, October 25, 2004. Mike had a distinguished career in biological control, first at the University of California at Riverside, then at Texas A&M University, and most recently in association with Montana State University and Beneficial Insectary. He was known as one of the world's most accomplished and resourceful foreign explorers for natural enemies and as a person with an almost magic touch with live cultures of parasitoids and their hosts. Mike was well known in the chalcidoid community for his work on biological control of Homopteran pests and for his work on the taxonomy of Aphelinidae. In recent years Mike had become the world's foremost authority on the genus *Eretmocerus*, a difficult and enigmatic group of whitefly parasitoids. He will be missed by his many colleagues and friends around the world. —Jim Woolley

Note: A full obituary will be offered in a forthcoming Chalcid Forum



Balcha sp. (Eupelmidae) from Montgomery County, Maryland, on dead, standing Prunus sp.

PUBLICATION NOTICES

Encyrtidae of Costa Rica (Hymenoptera: Chalcidoidea), 2. *Metaphycus* and related genera, parasitoids of scale insects (Coccoidea) and whiteflies (Aleyrodidae)

Noyes, J. S. 2004 (May 25), *Memoirs of the American Entomological Institute* 73:459pp.

Abstract of the abstract: The genus *Metaphycus* and eight closely related genera of the subfamily Encyrtinae (Encyrtidae) known to occur in Costa Rica are defined by means of brief generic diagnoses. The biology and use in biocontrol is summarized for every genus and identification keys to the Costa Rican species are provided. All 217 included species are defined by means of illustrations and brief diagnoses or full morphological descriptions and information is provided on their known distributions, host ranges, and use in biocontrol. Two genera are described as new; 202 species are described as new, including 182 *Metaphycus*, one *Blanchardiscus*, nine *Bennettisca*, one *Inbiaphycus*, one *Chorotega* and seven *Paramucrona*; four new specific synonymies are proposed, two new combinations are proposed, and a lectotype is designated.



Chalcidological Eye-Candy
by Greg Ballmer, UC
Riverside

Perilampus regalis

**Perspectives On Biosystematics And
Biodiversity**

**Prof. T. C. Narendran Commemoration
Volume**

SERSA (Systematic Entomology Research Scholars Association), Systematic Entomology Laboratory, Department Of Zoology, University of Calicut, Kerala, India -673635

This commemoration volume focusing on Biosystematics and Biodiversity emphasizing insect systematics, is a compilation of invited research articles from eminent scientists in the field. Taxonomic reviews, revisions, identification keys, checklists, several new generic and species descriptions (3 new genera and 47 new species) along with lead articles on biodiversity concepts and issues, make this publication unique.

The following are the eminent authors who contributed to this volume : Z. Boucek (London), J.S. Noyes (London), M.W.Gates (Washington D.C.) E.E. Grisell (Washington, D.C.), Gary A.P.Gibson (Canada), John Lasalle (Australia), Steven L. Heydon (California, U.S.A), John T. Jennings (Australia), Andrew D. Austin (Australia), Gennaro Viggiani (Italy), Karl-Johan Hedqvist (Sweden), Serdar Tezcan (Turkey), Erol Yildirim (Turkey), C.Van Achterberg (The Netherlands), Victor Fursov (Ukraine), Kazuaki Kamijo (Japan), Svetlana N. Myartseva (Mexico), Song Dongbao (China), Chen Jiahua (China), Alex Gumovsky (Ukraine), Wahedul Islam (Bangladesh), T. N. Anantha-krishnan (Chennai), Madhav Gadgil (Bangalore), P.T. Cherian (Trivandrum), Mohammed Hayat (Aligarh), C.A.Viraktamath (Bangalore), D.Ray Chaudhari (Kolkatta) and many others.

Prof.V.K. Gupta (Florida) has written the foreword for this volume.

First edition: March 2004. Size: Dummy one-eighth with Calico binding. Pages: 666. Price: Institutions : Rs.1500 plus postage; Individuals: Rs.1000 plus postage; Foreign: U.S. \$ 100 plus postage. For orders and other information, please write to: Dr. (Mrs.) Rajmohana. K. (raj_mohana@hotmail.com) or Mr. K. Sudheer (sudheer_kt03@yahoo.co.in), Systematic Entomology Laboratory, Department of Zoology, University of Calicut, Kerala, India -673 635.

**A Web Based Interactive Key To Eulophid
Parasitoids Of Leafmining
Agromyzids**

Placido (Dino) Reina and John La Salle have produced a web-based interactive key to the genera of eulophids which are parasitoids of leafmining agromyzids. It uses Lucid software to produce an interactive multiple-entry key. It uses 25 characters to key out 31 genera. The Lucid software necessary to run the key can be downloaded for free. All genera have information sheets, which give diagnostic characters, distribution, biology and comments.

Reina P. & La Salle J. (2003) Key to the World Genera of Eulophidae Parasitoids (Hymenoptera) of Leafmining Agromyzidae (Diptera).

http://www.ento.csiro.au/science/eulophid_key/eulophids.htm

**Universal Chalcidoidea Database
On The WWW**

www.nhm.ac.uk/entomology/chalcidoids

A facility on the WWW enabling easy retrieval of information relating to parasitic wasps belonging to the superfamily Chalcidoidea (Insecta: Hymenoptera)

J. S. Noyes

The site includes an image database, comprehensive taxonomic, biological and distributional information, a comprehensive bibliography and downloadable PDF files of important literature.

Readers of *Chalcid Forum* can help improve the site by providing PDF files of literature for inclusion in the database. Please contact John Noyes at jsn@nhm.ac.uk for offers.

The database is also available on CD: Interactive catalogue and biological database of World Chalcidoidea. Contact the publisher: Dicky S. Yu@telus.net, or Dicky Yu, P.O. Box 48205, Bentall Centre, Vancouver B.C., V7X 1N8, Canada; see also www.taxapad.com

IMPORTANT NEWS

**Order of the Golden Chalcid
Selects New Member**

See full story on page 13

HOSTS, RANGES, and BEHAVIOR

As promised, we are continuing to persevere with this section despite the fact that no one is contributing. Perhaps next time we will corral more records.

Notes on *Henryana magnifica* Yoshimoto and *Oodera* sp.

Michael Gates

Systematic Entomology Laboratory, ARS, Washington DC

New Range records for *Henryana magnifica* Yoshimoto and *Oodera* sp.

USA: Maryland: Montgomery Co.: 4 mi SW Ashton, vii.2004, M. Gates. Reared from *Wisteria sinensis* (Sims) DC, heavily infested with the introduced buprestid, *Agrilus pilosovittatus* Saunders. A variety of other insects (cerambycids, scolytines, flies, etc.) were also reared from this material, so only host "associations" are possible to posit. Additional specimens of *Henryana* also emerged from *Vitis* sp. heavily infested with *Phymatodes amoenus* (Say) (Cerambycidae) from this locality and *Gymnocladus dioica* (L.) (Kentucky Coffeetree) twigs from eastern Alexandria along the Potomac River. *Henryana* has been hypothesized as an egg parasitoid given its close relationship with *Ootetrastichus*, a subgenus of *Aprostocetus* (Huber and LaSalle, unpublished manuscript). The unidentified, likely introduced, *Oodera* had been previously reared from dead wood of honey locust (*Gleditsia*). Species of *Oodera* have been recorded from scolytines and buprestids.



Henryana magnifica Yoshimoto



Oodera sp.

Behavioral Observations of *Oodera* sp.

During rearing of various native hardwoods infested with xylophagous coleopterofauna during the spring and summer of 2004, I was fortunate to obtain some specimens of *Oodera* sp. (see previous section). This species is hypothesized as an introduced taxon similar to the Palearctic species *O. formosa* (Giraud) (Gibson 2003). This genus is characterized, in part, by an enlarged profemur having ventrally projected straight spicules and with row/narrow and spinelike setae exterior to spicules and a curved protibia. The prothorax articulates ball-and-socket fashion with the mesothorax.

Discussions with Gary Gibson about the possible raptorial function of the prolegs led to speculation that any functional aspect might be related to intraspecific interaction, host/substrate interaction, or some type of 'capture' functionality.

As I only had a single specimen in captivity in a Petri dish, I decided to test if the specimen might interact with small arthropods co-occurring on the substrate from which the *Oodera* emerged. Adding small acalyptrate flies or psocopterans (singly) collected from the emergence vial to the Petri dish with the *Oodera* resulted in no overt response. Mutual disinterest or avoidance were the only responses observed. I did record some 'standard' grooming behaviors for cleaning antennae or ventral mouthparts. The grooming of an antenna begins with the base of the antenna appressed near the base of the protibia. The length of the antenna is groomed as the protibia extends from the base to the apex of the protibia. Both protibiae work in tandem on each antenna, alternately grooming both antennae. A similar process is used on the ventral mouthparts.

Maybe next year will yield a male and a female concurrently.

Gibson, G. 2003. Phylogenetics and classification of Cleonyminae (Hymenoptera: Chalcidoidea: Pteromalidae). Mem. on Entomol. International 16: 339 pp.



Oodera sp.

COLLECTIONS

INBIO—Pteromalidae

Steve Heydon

Bohart Museum, University of California, Davis

In the spring of 2003, Carolina Godoy was kind enough to invite me down to visit the collection at INBIO in Costa Rica. Once there, she and Paul Hanson chained me to a bench and made me sort through their collection of Pteromalidae day after day. In the two weeks they kept me, I made it through their collection of some 24 drawers of Pteromalidae. Quite a few specimens were from other families, and they were moved accordingly. The remainder now forms the INBIO collection of some 18 drawers of sorted Pteromalidae. Several Schmitt boxes of the more problematical specimens were shipped to me here at Davis and are awaiting study. Almost none of the specimens are identified beyond genus because so little is known about the Neotropical Pteromalidae at the species level. As an example, the largest pteromalid species found in Costa Rica appears to be undescribed. All the specimens were collected in Costa Rica and nearly all were collected by Malaise trap. The quality of the specimens varies since this material was prepared by workers that were not actually chalcidologists, so Lepidoptera scales and glue are a problem on some specimens. Still the quantity and variety of specimens available make this collection unrivaled for the Neotropical region.

What is really outstanding about the collection, and the Neotropical pteromalid fauna in genera, is the predominance of the single genus *Lelaps*. Of the 18 drawers of INBIO pteromalids, 9 are filled with specimens of this one genus. I suspect that the species level diversity within this genus is also high. Despite their abundance and large size, there is an almost complete lack of host information.

In addition to the INBIO collection, the personal collection of Paul Hanson is an important addition to our knowledge of the Costa Rican fauna. Paul is a tireless collector of figs and galls. His collection is a great complement to the INBIO collection since it is full of those species that are tied closely to the host plant and are not likely to be collected in Malaise traps or by casual collecting.

Paul and Carolina were kind enough to take me out

into the countryside on the weekends. I was privileged to visit the La Selva Research Station in the Northeast part of the country, the high altitude forest along the crest of the Central Cordillera, and also the region around Volcan Poas.

INBIO Holdings
of Pteromalidae
Taxon (# specimens)

Cleonyminae
Amotura (2)
Cleonymus (24)
Unident. Cleonyminae (30)

Leptofoeninae
Leptofoenus (22)

Spalangiinae
Spalangia (110)

Eutrichosomatinae
Peckianus (8)

Colotrechninae
Bofuria (56)
Bomburia (1)

Erotolepsiinae
Erotolepsia (600)

Cerocephalinae
Cerocephala (2)
Neocalosoter (1)
Genus? (1)

Erixestinae
Erixestus (18)

Asaphinae
Asaphes (1)

Herbertiinae
Herbertia (6)

Eunotinae
Cephaleta (1)

Diparinae
Dipara males (35)

Parurios males (40)
Dipara
& Parurios females (18)
New genus (65)
Lelaps (~6,000)

Pireninae
Gastrancistrus (23)
Macroglenes (1)

Pteromalinae
Acaenacis (7)
Aepocerus (28)
Alticornis (90)
Anisopteromalus (3)
Apsilocera (30)
Arthrolytus (1)
Bubekia (33)
Callitula (50)
Catolaccus (102)
Chlorocyclus (3)
Chrysoglyphe (55)
Cryptoprymna (3)
Dibrachys (1)
Eurydinotelloides (125)
Ficicola (11)
Gastracanthus (60)
Halticoptera (2)
Halticopteroides (55)
Heteroschema (~430)
Homoporus (2)
Lycus (330)
Mauleus (2)
Meristhmus (2)
Nadelia (4)
Neocatolaccus (120)
Norbanus (9)
Notoglyptus (1)
Ogloblinisca (35)
Ottawita (2)
Oxysychus (3)
Pachycrepoideus (5)
Pachyneuron (205)
Paracarotomus (1)
Perilampidea (21)
Polstonia (2)
Propodea (150)
Psilocera (242)
Pteromalus (4)
Sphegigaster (1)
Syntomopus (4)
Trickokaleva (2)
Toxeumella (19)
Genus nr. Trichokaleva (30)

CHALCIDOID NEWS

Excerpt from the Biography of Frank Girault,**Son of A. A. Girault**

Lorinda Travis

Granddaughter of Alexandre Arsene Girault

[Note: The inclusion of this excerpt came about from an e-mail to Mike Schauff from Chris Burwell at the Queensland museum. At the time of the writing of this e-mail, Frank Girault (son of A. A. Girault) and his daughter Lorinda Travis were visiting the Museum. They were interested in learning more about the impact A. A. Girault has had on chalcidology and examining some of his materials. Schauff was contacted to provide a copy of the Works of A. A. Girault CD-ROM to Frank Girault. This led to some discussion among the editors and we decided to see if Frank might be willing to answer a "20 questions" type interview supplied to and administered by his daughter. This did not materialize, but we received an excerpt concerning A. A. Girault from his personal history story that he wrote. Also, there is a website available that has a bit more information (<http://users.snip.net/~sgirault/arsenef.htm>).— M. Gates]

I was born in Brisbane, Australia, on May 23, 1928. I attended school at Indooroopilly State School from 1932 until 1940. Schoolchildren were not required to wear shoes. I don't recall owning shoes until I was about 12 years old. Then, they were only for going to town, I still did not wear them to go to school. For school, we were required to wear white shirts and black shorts. Girls wore blue pinafores and white blouses.

In Australia, instead of kindergarten, we had three prep grades which lasted for one and half years. Then we started first grade. I lived on Kate Street in Indooroopilly, which is a suburb of Brisbane. Houses in Australia from New South Wales north, are built up on pilings to allow for air circulation. The one we lived in in Indooroopilly was, at the closest point, about two feet off the ground.

My mother, Elizabeth, had tuberculosis. For as long as I can remember, my mother spent her life in bed. She had a tinkley bell which she would ring when she needed something. She died when I was four or five years old.

I lived with my father, Alexandre Arsene, my sisters, Helen and Daisy, and my brother, Lawrence (Larry). Larry worked at the Archerfield Airport. He rode his bi-

cycle nine or ten miles every day, six or seven days a week. About once or twice a month, he would take me with him, ride me on the cross bar of his bike...a tough ride. It was fun for me to be at the airport and watch the aeroplanes coming and going. I think this is where I got hooked on aeroplanes. Once in a while, I would get to go along on test flights after maintenance had been done. This started my love of flying. It has not gone away.

My father was born in Annapolis, Maryland, in 1884. He was sent to Australia by the U.S. Government to determine what was killing the sugar cane in Northern Queensland. For a number of years, he lived in Nelson (now called Gordonvale) working on this project at the sugar experimental station. When the problem was solved, he began working for the Brisbane Museum studying insect species. We used to spend hours at the kitchen window on Kate Street in the evenings catching bugs with a cork wet with alcohol. When we caught a bug, the cork was put into a vial which was filled with alcohol. We would shake the vial and the bug would wash into the alcohol. The bugs are still preserved at the Brisbane museum and we were able to see them when we visited Australia in 1995. They are still working on my father's collection.

At one time, I found a bug out on the chrysanthemum and brought it in and showed it to him. He named this bug after me. We also saw this bug at the museum.

When I was about eight or nine, my father started acting strangely. He stood in the yard and hollered at the neighbors. It started one afternoon and continued into the night. At some point, the cops were called and he was taken away. A day or two later, my oldest brother, Ern, and I took him up to Goodna, which was an insane asylum. Goodna is just east of Ipswich which is about 30 miles west of Brisbane. We went there on Ern's motorcycle with a side car. I sat behind Ern and my father was in the sidecar [the rest of his story concerns his life].

Alexandre died in the asylum on 5/2/1941. I hope this is the type of information you were seeking. I'll try and get additional information to you in the coming months.

**In Celebration of the 80th Birthday
of Zdenek Boucek**

John S. Noyes
Dept. of Entomology
The Natural History Museum
London SW7 5BD, England

Zdenek Boucek celebrated his 80th birthday on January 8th 2004 quietly at his home in England with his family. His interest in Chalcidoidea systematics developed in his early 20's when he began to study insects under the guidance of an amateur entomologist in his home town of Hradec Kralove in Czechoslovakia. It was at the home of this entomologist that he met Tatiana (Tania) Rydlov, who was the entomologist's niece and was later to become his wife. His first paper, a revision of the European species of Chalcididae, was published in 1952. In 1960 he took up employment in the Natural History Museum, Prague where he was able to develop further his interest in Chalcidoidea. However in 1969, as a result of the worsening political situation in Czechoslovakia, Zdenek and his family took the painful decision to leave their homeland and travel to England. He was helped in this by his good friend Eric Classey. The following year Zdenek became employed by the Commonwealth Institute of Entomology. Since that time he has authored more than 160 books, book chapters or papers on Chalcidoidea. He will be best remembered for his monumental work dealing with 14 families of Australasian Chalcidoidea published in 1988. This work included such a large number of new taxonomic and nomenclatural changes that it reportedly took one person more than three weeks to extract the information for inclusion in Zoological Record. After retirement in 1989, Zdenek and Tania spent six months in Ottawa and the following year in France where Zdenek worked with Jean-Yves Rasplus on an illustrated key to West-Palaeartic genera of Pteromalidae. With the fall of the "Berlin wall" in 1989 and "velvet revolution" in Prague later that year, Zdenek and Tania returned to Czechoslovakia once again and bought a cottage in Velky Vrestov in 1992 where they now spend most of the year. Over the years Zdenek has built up an impressive collection of Chalcidoidea and other Hymenoptera. A proportion of this, mostly Encyrtidae and non-European materi-

al, has been deposited in The Natural History Museum, London but the bulk of it, mostly non-Encyrtidae and European material, remains in Czechoslovakia, either in the care of the Natural History Museum, Prague or in Charles University, Prague. Although he has slowed in recent years, Zdenek continues to publish on chalcid taxonomy and he now spends much of his time helping a Czech student, Petr Janata, to continue work on the group and to care for his collection of literature and the part of his collection that is in Charles University.

In addition to eight species of Sphecidae and one genus and one species of Braconidae, Zdenek has described 1094 taxa in Chalcidoidea as follows: 47 family group names (including 1 new family), 281 genus group names and 766 species group names.



Selected bibliography

- 1952: The first revision of the European species of the family Chalcididae (Hymenoptera). Sb. ent. Odd. Mus. Praze 27(supplement 1): 1-108.
- 1958: Revision der europäischen Tetracampidae (Hym. Chalcidoidea) mit einem Katalog der Arten der Welt. Sb. ent. Odd. Mus. Praze 32: 41-90.
- 1958: Eine Cleonyminen-Studie; Bestimmungstabelle der Gattungen mit Beschreibungen und Notizen, eingeschlossen einige Eupelmidae (Hym. Chalcidoidea). Sb. ent. Odd. Mus. Praze 32: 353-386.
- 1959: A study of central European Eulophidae, I: Eulophinae (Hymenoptera). Sb. ent. Odd. Mus. Praze 33: 117-170.
- 1959: A study of central European Eulophidae, II: *Diaulinopsis* and *Cirrospilus* (Hymenoptera). Sb. ent. Odd. n.r. Mus. Praze 33: 171-194.
- 1963: Studien über europäische Eulophidae, III: Euderinae (Hymenoptera: Chalcidoidea). Beitr. Ent. 13: 257-281.
- 1964: Keys to the Chalcidoidea of Czechoslovakia (Insecta: Hymenoptera). Mem. ent. Soc. Canada No 34: 120pp (with some help by A. Hoffer and S.J. Peck).
- 1965: Studies of European Eulophidae, IV: *Pediobius* and two allied genera (Hymenoptera). Sb. ent. Odd. Mus. Praze 36: 5-90.
- 1968: Palaearctic Eulophidae sine Tetrastichinae. Index of Entomophagous Insects 3: 260pp (Eds: Delucchi, V.; Remaudière, G.) Le François, Paris (with R.R. Askew).
- 1974: A revision of the Leucospidae (Hymenoptera: Chalcidoidea) of the world. Bull. Br. Mus. Nat. Hist. (B) Supplement 23: 241pp.
- 1988: Australasian Chalcidoidea (Hymenoptera). A biosystematic revision of genera of fourteen families, with a reclassification of species. CAB International, Wallingford, Oxon, U.K., Cambrian News Ltd; Aberystwyth, Wales, 832pp.
- 1991: Illustrated key to West-Palaearctic genera of Pteromalidae (Hymenoptera: Chalcidoidea): 140pp Institut National de la Recherche Agronomique, Paris (with J.-Y. Rasplus)
- 1992: On the New World Chalcididae (Hymenoptera). (Several different papers.) Mem. Am. Ent. Institute 53:iv+466pp (with G. Delvare).
- 1997: Agaonidae. Pp.: 117-133. Chalcididae. Pp.: 151-164. Leucospidae. Pp.: 496-498. Tetracampidae. Pp.: 705-708. In: Gibson, G.A.P., Huber, J.T. & Woolley, J.B. (eds): Annotated keys to the genera of Nearctic Chalcidoidea. Ottawa: NRC Research Press, xi+794pp (Chalcididae with J.A. Halstead).
- 2001: Palaearctic species of *Ammoplamus* (Hymenoptera: Sphecidae). J. Nat. Hist. 35: 849-929.
- 2004: Two new species of Chalcidoidea (Hymenoptera: Pteromalidae, Encyrtidae) associated with *Icerya patternsoni* Newstead (Hemiptera: Margarodidae), a pest of coffee in Kenya. Pp. 137-145. In: Rajmohana, K., Sudheer, K., Girish Kumar, P. and S. Santhosh (eds.): Perspectives on Biosystematics and Biodiversity, Prof. T. C. Narendran Commemoration Volume. Systematic Entomology Re-

search Scholars Association (SARA), Kerala, India, 666 pp (with John S. Noyes).

Meeting of the International Society of Hymenopterists

Michael Schauff

The Annual General Meeting of the International Society of Hymenopterists took place during the International Congress of Entomology at Brisbane, Australia on 19 August 2004. Chairing the session was Dr. Denis Brothers from South Africa. Following is a summary of some of the meeting.

Andrew Polaszek, a member of ISH and Executive Secretary of the ICZN, was introduced. He presented a short talk outlining the dire outlook of the ICZN due to funding difficulties, and urged the members of ISH to get involved and help ensure the continued existence of ICZN in its vital role of maintaining the stability of zoological nomenclature and helping to pave the way for web taxonomy and other advances.

Membership in the Society stands at 302 (50 student members, 66 sponsored members, 40 Institutional members, 64 members in arrears). Negotiations are underway with Allen Press to make it possible for members to pay dues, etc. on-line. It was noted that dues had not been increased for several years and that the financial position of the Society was beginning to suffer from a lack of increased resources. Discussion by the members present was generally in favor of the Executive considering a reasonable increase in dues for next year and also of considering a slight increase in page charges for the journal.

President Brothers presented a brief summary of the planning for the next (6th) International Congress of the Society which will be at an as yet undetermined location in South Africa towards the end of January 2006.

President-Elect Denis Brothers noted that the Transfer of Officers was to take place at this meeting and he therefore assumed the position of President. He also transferred his office as President-Elect to Michael Schauff who was present. Other new officers are: Michael Gates, Secretary; Justin Schmidt, Treasurer; Gavin Broad, Editor. Warm thanks were extended to the outgoing officers for their valuable and often extensive service to the Society.

It was announced that Zdenek Boucek had been awarded the Distinguished Research Medal and Eric Grissell was given the Society Service Award. Congratulations to both of them.

The Editors of *Chalcid Forum* encourage our readers to become members of ISH. For more information see the ISH website at: <http://hymenoptera.tamu.edu/ish/>

TRIP REPORT

Costa Rica

Christer Hansson

Department of COB, Zoology

Lund University, Sweden

e.mail: christer.hansson@cob.lu.se

For the last five years I have been working with the fauna of Eulophidae in Central America (mainly Costa Rica), trying to get a grip of the diversity of this group from this part of the World. In February this year (2004) I was on a three-week collecting trip in Costa Rica. This was not my first trip here; I try to visit Costa Rica frequently, to collect and to look at different habitats, trying to keep up with reality and not just looking at dead insects through a microscope. As these trips go I usually stay in one place for about a month, putting up malaise and yellow pan traps for the duration of the stay and collect on a day-to-day basis with the sweep-net. There is usually at least one of the hymenoptera parataxonomists with me all the time, to help collect, sort material etc. The parataxonomists are collectors of specimens and information, employed by the INBio (Instituto Nacional de Biodiversidad) and stationed in National Parks in Costa Rica. On some occasions I have had as many as three parataxonomists helping me out, and then we are talking about serious collecting (try to imagine what four skilled collectors – I include myself in this exclusive group as well(!) – can sweep during a week)! However, this year I decided to try something different and instead of staying in one place I visited three different localities, about one week each. Also, instead of putting up traps I decided to concentrate on sweeping, which is completely dependent on nice and dry weather. I usually try to be in Costa Rica sometimes during February to April, which is part of the dry season and a good time for collecting in Costa Rica (and it is winter in my home country, Sweden!), but this year the dry season was unusually wet.

The first locality I visited was the National

Park of Volcan Tenorio. This is up in the north, in the mountain chain Cordillera de Guanacaste, with an elevation of around 700 meters above sea level. The ranger station, which was the base for me, was on the Atlantic side of the mountain, as were also the places in which I could collect. For those of you who are not familiar with Costa Rica and its complex climate, it is generally said that the Atlantic side of the cordilleras is always wetter than the Pacific side. So true this turned out to be, of the seven days I stayed here only a day and a half could be used for collecting, the remaining time it rained. Anyone who has experience of a real tropical rain knows what “down-pour” means, and since the roofs of most houses down here (at least the ranger stations) have a tin roof one also hears the rain loud and clear. This was also the only place where I had help of a parataxonomist, Antonio (Tonio) Azofeifa, who was not happy with this humidity (and neither was I!). Every day Tonio looked out in the mist, shook his head, and muttered “no vamos a collectar hoy”, and wished that we had been elsewhere. On a few occasions the sun came through and dried things up so that we could rush out and collect as much as we could before the mist rolled in and the rain started again.

The second place was Monteverde, which is to the southeast of Tenorio, and situated higher up (1500-1700 meters above sea level) in a different mountain chain, Cordillera de Tilaran. Monteverde is on the Pacific side, which usually means drier weather and this also turned out to be true. I was extremely lucky, every day of the week was sunny and virtually no wind, so it was good collecting weather! Finally I could earn my pay and collect along the trails in this wonderful cloud forest. Each day I started with about two hours bird-watching before the vegetation had dried up enough to make it worth while collecting. Yes, I am a birder as well, can't help it. This kind of habitat is difficult when it comes to actually seeing the birds because the vegetation is so dense that the birds always manage to hide behind something. Usually all one can see is some part of the under

side – usually the tail – not the best part for identification, but I was happy to see the quetzal here. From around ten o'clock and onwards I strolled up and down the trails collecting as best I could. Late afternoons and evenings I sorted the material. When the time came for me to leave Monteverde I felt a bit sad, partly because of the good collecting weather and partly because it is such a nice place. But I was also looking forward to collecting in a lowland tropical rain forest next.

The research station La Selva was my third and last stop during this collecting trip. This station is situated in the northeast, on the Atlantic side, and is just above the sea-level. I arrived early in the afternoon and the temperature was 32 centigrade in the shade and it was humid, quite a difference from the temperate conditions in the cloud forest. John Noyes arrived later the same afternoon with his wife, Mary. We looked forward to some days of collecting here, but it was not to be. During the night a cold-front moved in from the east, the temperature dropped and it started to rain, and continued to do so throughout the time I stayed at La Selva, so no collecting was possible. This was a real pity for even if La Selva is fairly well investigated, new and interesting stuff keeps turning up in the material I get from there, and I had hoped to collect some weird eulophid myself. It is a good place to collect because the paths are wide and it is easy to swing a net over the vegetation along these paths. However, the time was not completely wasted because La Selva is a good birding place, and that one can do even when it rains. I also had the opportunity to look at the surroundings, and compare them with my impressions from my first visit here in 1986. What particularly struck me was that the paths in the forest from 1986 had been transformed into “highways”. These are about two meters wide concrete roads that run through the forest, and they are used to a large extent by bicyclists that “swoosh” by the pedestrians trying to experience the atmosphere of a tropical rain forest (they probably have road-kills here, a unique experience in a tropical rain forest where you

cannot drive a car?). I had never before experienced this “accessibility” in a Costa Rican habitat and I must admit that it did not enhance my experience of a tropical forest. After five days of more or less continuous rain I returned to base, Santo Domingo, where the weather was sunny and dry, and I could finally dry my wet clothes.

In spite of the bad weather I was really happy with the trip; the arrangements including the transport and the accommodation made by INBio were excellent (thank you Carolina Godoy and Alvaro Herrera!). I had also bagged a substantial amount of eulophids (over a thousand specimens and with a high species diversity), and I had been able to see three different localities, from which I have a substantial amount of material, collected previously, and it was certainly nice to see the places from which this material had come. I am already looking forward to the next trip!



MYMAROMMATID NEWS

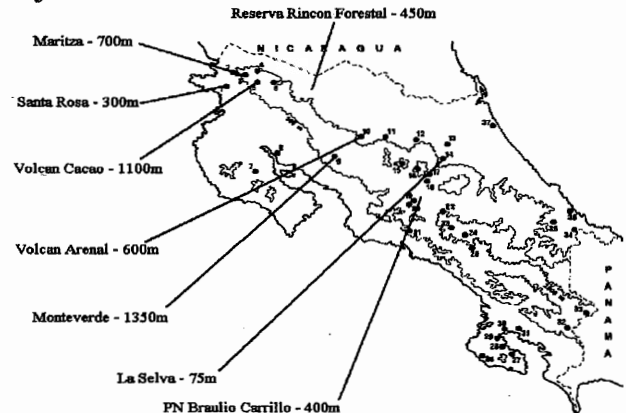
The Hunt for Mymarommatidae in Costa Rica, with an Aside

John S. Noyes
Dept. of Entomology
The Natural History Museum
London SW7 5BD, England

Since my first visit to Costa Rica since 1990 I have been collecting microhymenoptera there perhaps more than 15 times. It has been becoming increasingly puzzling that no representatives of the family Mymarommatidae have turned up in Costa Rica. Given that Costa Rica is now probably the most intensively sampled place on this planet for microhymenoptera, it might almost have been possible to say that the family is not to be found there, although specimens have been found in other parts of central America and northern South America such as Belize and Venezuela. We have sampled the equivalent of more than 500 Malaise trap years, 100 yellow pan trap years as well as multitudinal sweep samples and other forms of sampling. So it seems almost impossible to have sorted all these samples without having found a single specimen of this enigmatic family. I even offered a reward of a Walkman to the first person who found this family in Costa Rica. Is it possible that Mymarommatidae just do not exist there? However, given that we have found mymarommatids in a good number of countries around the world where we have done little collecting and that mymarommatids can be missed easily in Malaise trap, yellow pan trap or sweep samples in seemed likely that they had merely been overlooked.

In 2003 I decided to have a concerted effort to see if I could find a specimen during a short two week holiday with Mary, my wife, in Costa Rica. Normally I would collect microhymenoptera using an aspirator, but on this occasion I decided to dump everything into alcohol and bring it all back to England to be gone through at my leisure with a "fine tooth comb". The holiday itself was fantastic. We spent the whole of it in the northern half of the country visiting mostly the western areas (see map) with very varying climate and vegetation

types ranging from the seasonal dry forest on the western side of the central range of Santa Rosa National Park at 300m above sea level to the damper forests of Reserva Rincon Forestal and La Selva Biological station on the eastern side to Volcan Arenal at 600m and Monteverde at about 1400m. Unfortunately Monteverde cloud forest was very damp when we were there and so collecting was limited to some drier transitional forest just below Monteverde at about 1350m.



Once back in England I sorted the swept material twice and then fractionated off the lighter debris and smaller insects by putting the material into a tall measuring cylinder and pouring off the supernatant liquid after 20 seconds (assuming that the heavier debris would separate out and hit the bottom within that time and the lighter insects such as aphelinids, mymarids, trichogrammatids and mymarommatids would still be sinking in the liquid. This separated sample I examined again twice (also subsequently once more when I sorted out the beetles for a colleague). This meticulous sorting method probably requires about 12 hours sorting for each one hour spend sweeping so is not to be taken lightly.

My patience paid off. I was completely amazed when, on the fourth time through the sample from the driest forest that we had visited (Bosque Humedo, Santa Rosa National Park), I actually discovered a single mymarommatid. What incredible luck. It was a very small, pale specimen and extremely difficult to see. No wonder we had not found any previously!

Whilst separating out the Hymenoptera I pondered the fact that it should be possible to make a decent estimate of the density of microhymenoptera in the areas in which I had sampled. The net

that I use is essentially the same as that been published earlier (Noyes, 1982, see also Noyes, 1994) except that it has a detachable 3.5mm mesh screen. This normally allows any insect up to 6mm long through into the net, although "annoyed" polybiine vespids up to 13mm long will get inside. Given the fact that I have now been sweeping for chalcids for about 30 years my sweeping technique is now quite uniform in frequency and length of sweep. From knowing the period of time that I had collected in a given area it is possible to estimate the volume of vegetation (and air) that I had sampled. From this I can approximate the density of microhymenoptera per square metre from ground level to 2.3m above ground level. The results of this estimate are summarised in Table 1 and Fig. 1. These show that, in most samples, Chalcidoidea are the dominant smaller Hymenoptera representing slightly more than half of all individuals collected whilst ants make up about one-half of the remainder. Within the Chalcidoidea, parasitoids of eggs, armoured scales and whiteflies were by far the most numerous, with the genus *Encarsia* representing about 10% of the total Hymenoptera in some samples. From these samples, estimates of the density of smaller Hymenoptera per unit area from ground level to 2.3m ranged from two individuals per sq.m. in drier habitats to 18 per sq.m. in open secondary vegetation with the "normal" density at about 7.7 individuals per sq.m. in moist forest between 50m and 600m above msl.

Table 1. Summary of estimated density of various groups of "microhymenoptera" in sweep-net samples collected in lower understory in nine different localities ranging from primary/secondary forest (La Selva) at 50m to secondary "transition" forest at 1350m (Monteverde).

	Density of smaller Hymenoptera in understory (0m-2.3m)		
	Individuals per sq.m (mean)	La Selva	Range
smaller Hymenoptera	6.92	7.69	1.78 - 18.03
"microhymenoptera"	5.15	5.39	1.15 - 15.91
Aphelinidae	0.83	1.30	0.28 - 1.71
Eulophidae	0.73	0.78	0.10 - 3.85
Encyrtidae	0.23	0.28	0.10 - 0.60
Pteromalidae	0.15	0.12	0.10 - 0.46
Trichogrammatidae	0.27	0.35	0.02 - 1.18
Mymaridae	0.41	0.62	0.08 - 0.64
[Chalcidoidea	2.87	3.82	0.94 - 8.86]
Fligitidae	0.11	0.10	0.01 - 0.42
Diapriidae	0.34	0.11	0.02 - 0.78
Scelionidae	0.48	0.48	0.06 - 1.52
Platygastridae	0.84	0.55	0.08 - 3.90
[Ichneumonidae	0.41	0.42	0.24 - 0.65]
Formicidae	1.32	1.87	0.17 - 1.87

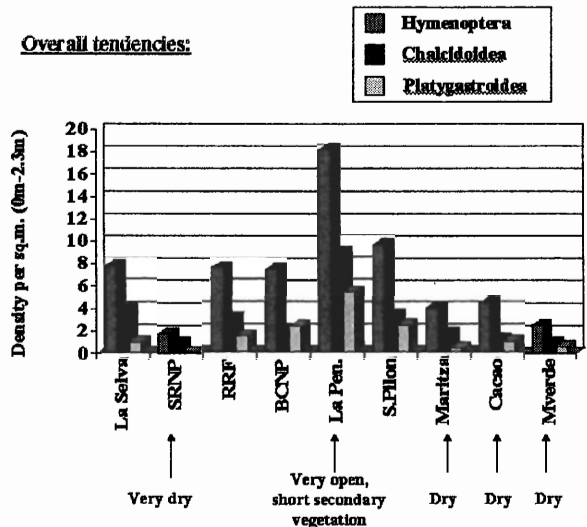


Fig. 1. Estimated overall densities of "microhymenoptera" at 9 different forest sites in Costa Rica with comparison of the two most variable groups across all sites, the Chalcidoidea and Platygastridae. Other groups varied little between sites. La Selva - La Selva biological station (50m, 10°26'N 84°01'W), SRNP - Santa Rosa National Park, Bosque Humedo (300m, 10°51'N 87°37'W); RRF - Reserva Rincon Forestal (400m, 10°53'N 83°18'W); BCNP - Braulio Carrillo National Park (450m, 10°09'N 83°57'W); Maritza - Guanacaste Conservation Area, Estación Maritza (700m, 10°58'N 85°29'W); La Pen. - Arenal National Park, La Peninsula (600m, 10°27'N 84°40'W); S.Pilon - Arenal National Park, Sendero Pilon (600m, 10°27'N 84°43'W); Cacao - Guanacaste Conservation Area, Estación Cacao (1100m, 10°55'N 85°0'W); Mverde - Monteverde (transition forest) (1350m, 10°18'N 84°49'W).

I am hoping to publish an in-depth analysis elsewhere at a later date. This is dependent on the generous help of several colleagues who have spent time estimating species richness in the various samples for me. However as publication of this may be some time away I am including a preliminary analysis below. This details the results of a six hour sweep sample from La Selva. I personally find the numbers of individuals and species collected pretty astounding. Species numbers marked with an asterisk (*) are my guesstimates and may be way out. Several colleagues helped by estimating species richness of thier groups in the sample - John Huber (Mymaridae), John Pinto (Trichogrammatidae), Christer Hansson (Eulophidae), Lubo Masner (Diapriidae, Scelionidae, Platygastridae), Jim Whitfield (Braconidae) and Jack Longino (Formicidae).

Table 2. Estimates of numbers of specimens of each family of "microhymenoptera" present in a 6-hour sweep net sample taken in La Selva Biological Station in February 2003. The proportions are similar for the other sites except that in some of those, the proportion of ichneumonids was slightly higher and a small number of bees and other families were also collected.

	Number of specimens in sample	Number of species in sample
Mymaridae	1471	71
Eulophidae	1851	283
Trichogrammatidae	930	36
Encyrtidae	652	110
Eurytomidae	74	*20
Pteromalidae	272	*40
Chalcididae	25	*12
Agaonidae	8	*3
Perilampidae	3	*1
Torymidae	5	*2
Eucharitidae	34	*10
Eupelmidae	25	*9
Aphelinidae	3261	*75
Signiphoridae	802	*35
Tanaostigmatidae	2	1
Diapriidae	255	44
Scelionidae	1109	86
Platygastridae	1258	45
Ichneumonidae	38	12
Braconidae	936	149
Evaniidae	3	2
Ceraphronidae	734	*60
Bethylidae	30	*5
Dryinidae	12	*3
Eucoilidae	240	35
Formicidae	4299	48
Mutillidae	1	1
Sphecidae	1	1
Totals	18331	1199

References

- Noyes, J.S. 1982, Collecting and preserving chalcid wasps (Hymenoptera: Chalcidoidea). *Journal of Natural History* 16:315-334.
- Noyes, J.S. 2004. Universal Chalcidoidea Database. World Wide Web electronic publication. www.nhm.ac.uk/entomology/chalcidoidea/index.html

Host Association of Mymaromatidae

Michael Gates and Gary Gibson

While in East Lansing, MI at the US Forest Service Northcentral Research Facility, we discovered Mymaromatidae that had been collected after emerging from ash (Oleaceae: *Fraxinus*) logs infested with Emerald Ash Borer (EAB; Buprestidae: *Agilus planipennis* Fairmaire). The rearing facility there is geared toward evaluating natural enemies of EAB and testing potential biocontrol candidates. We are collaborating in a project examining some new and introduced chalcidoids as potential biocontrol agents of EAB. Numerous parasitic Hymenoptera had been emerging from EAB-infested logs and we were identifying this material for our collaborators, Leah Bauer (USFS) and Houping Liu (Michigan State University), during our field time in Michigan this past summer. Approximately 12 mymaromatids had been reared from these logs. They represent a previously known new species for the Nearctic region that appears to be fairly widespread. We are currently engaged in obtaining specific level identifications of all associates that emerged from these logs in an attempt to narrow the possibilities for further work in seeking to elucidate the host of Mymaromatidae.

ADDRESS CHANGES AND ADDITIONS

The following folks have submitted new addresses:

Peter Bonde Jensen
Roenvangen 134
8382 Hinnerup
Denmark

Library
Eastern Cereal & Oilseed Research Centre
Agriculture & Agri-Food Canada
Ottawa, ON K1A 0C6
Canada

The following have been added to our mailing list:

Roger Burks
Entomology Department
University of California
Riverside, CA 92521

Dipl. Biol. Lars Krogmann
University of Hamburg
Zoological Institute and Zoological Museum
Entomological Division
Marin-Lutehr-King-Platz 3
D-20146 Hamburg
Germany

The following mailings of CF were returned to us:
Barrie Stanfield (Canada)
Steven Orzack (USA)