

# CHALCID FORUM

No. 7

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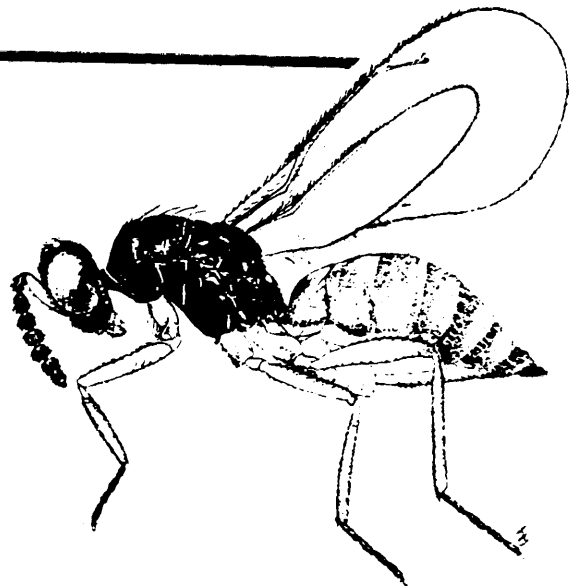
A Forum to Promote Communication  
Among Chalcid Workers

## EDITORS of this issue:

M.E. Schauff, E.E. Grissell  
Systematic Entomology Laboratory, USDA  
c/o U.S. National Museum, NHB 168  
Washington, D.C. 20560 U.S.A.

## ALTERNATE EDITORS:

Gary Gibson, John Huber  
Biosystematic Research Institute  
Agriculture Canada  
K.W. Neatby Building  
Ottawa, Ontario, CANADA K1A 0C6



*Elachertus loh* Schauff

## EDITORS' NOTES

As we mentioned in the last issue of CHALCID FORUM we are moving the main editorial duties from the USNM to our Canadian Co-editors at the Biosystematics Research Center for the next couple of issues to help spread out the workload. Material for inclusion in the newsletter should be sent to Gary and John from now on.

We are glad to see that the Forum section is stirring up some interest and we hope that more of our readers will take the time to write us with reports on their current research, trip reports, and ideas on various subjects. Please remember that WE DEPEND ON YOU to keep the newsletter interesting and up to date.

As promised, we are reissuing an up-to-date mailing list of all the scientists, libraries, and laboratories that are currently receiving CHALCID FORUM. Our mailing list continues to grow a bit with each issue and we are striving to keep it current and correct. Nevertheless, errors are probably unavoidable and we hope that you will continue to let us know if we have incorrectly spelled a name, used an old address, or are sending issues to dead people and so on.

Finally, we would like to thank Linda Heath Lawrence for the habitus that we are using for this issue's masthead. A few of you may recognize it from a paper that one of us (MES) did last year. We also would like to apologize for the decline in the print quality of recent issues. Budget constraints have dictated that we go to a contracted photocopying service and this has had a particularly severe effect on the masthead.

## RESEARCH NEWS

B.R. Subba Rao (London, England): "I have just retired from C.I.E. However, I continue to work 2 or 3 days a week on Chalcidoidea with particular reference to Indian Mymaridae, Trichogrammatidae, Aphelinidae, and Encyrtidae."

Anura Wijesekara (College Park, Maryland): I am a Sri Lankan attached to the Department of Agriculture, Sri Lanka. I am starting my M.S. at the University of Maryland, College Park. My project is to revise the tribe Euplectrini from Sri Lanka under the supervision of Dr. C. Mitter (University of Maryland) and Drs. M. Schauff and E. Grissell (Systematic Ent. Lab.). The tribe Euplectrini from Sri Lanka is represented by 5 genera at present (Euplectrus (1 sp.), Neoplectrus (1 sp.), Metaplectrus (2 sp.), Platyplectrus (1 sp.), and Autoplectrus (1 sp.)). The other 3 genera (Euplectromorpha, Aroplectrus, and Trichoplectrus) are not known to occur in Sri Lanka. Not much attention has been given to this important group in Sri Lanka since Gadd's 1946 work. I would be most grateful to hear from anyone interested in Oriental Euplectrini or who knows of Sri Lankan specimens or the whereabouts of Gadd's collection.

Errol Valentine (Auckland, New Zealand): We have received notice from the Director of the Entomology Division, DSIR that Dr. Valentine has retired for reasons of ill health. The few outstanding manuscripts are being completed in collaboration with John Noyes (BMNH) and Ms. A. Walker (CIE). The collection of reared Hymenoptera is being curated and will be incorporated in the New Zealand Arthropod collection. Voucher specimens and other Hymenoptera should still be sent to the New Zealand Arthropod collection. Specimens for identification should be sent to the Curator, New Zealand Arthropod collection at: Department of Scientific and Industrial Research, Entomology Division, Private Bag, Auckland, New Zealand.

E.C. (Ted) Dahms (Brisbane, Australia): "Part 4 of the Girault checklist is about to be issued. It is in page proof form and should come out by the end of May. This completes the chalcidoid section with only a few types to go in other superfamilies. They will go on the back burner until I complete the MS on Australian encyrtid genera with Gordon Gordh."

Christer Hansson (Lund, Sweden): Christer recently received his PhD and will be working at the museum for a few months. He also writes that his work on New World Chrysocharis has been completed and has been sent off to the editor of Ent. Scand. He has also finished a manuscript on the Holarctic and Oriental species of Derostenus.

### ETCETERA

INDIA CHALCIDOID CATALOG: Drs. R. B Subba Rao and V. Gupta write that some extra copies of The Chalcidoidea of India and the Adjacent Countries, Parts I and II are available for purchase by serious workers in the Chalcidoidea. Part II (1986, catalog) is priced at US \$10.00 and Part I (1985, keys to families and genera) is priced at US \$20.00. Please enclose US \$2.00 for surface mail for one or both volumes. Write:

Prof. Virendra Gupta  
Editor, Oriental Insects  
University of Florida  
3005 S.W. 56th Avenue  
Gainesville, Florida 32608 USA

PALEARCTIC HYMENOPTERA CATALOG: Dr. Jenő Papp (Hungarian Natural History Museum, Budapest) writes that he will be editing a 15 volume catalog of Palearctic Hymenoptera to be published by the Hungarian Academy of Sciences. Terebrantes will be covered in volumes 3-10 and the chalcidoid numbers (vols. 5-8) will be authored by several of the better know European chalcid workers.

CONGRATULATIONS!: Ted Dahms has been awarded second prize in the Filippo Silvestri Foundation competition for 1985 for his work and Melittobia and the Girault checklist. Way to go Ted!!

## TRAVEL REPORTS

T.C. Narendran (University of Calicut, Kerala, India): "In the course of my work on Chalcididae, I visited the U.S. National Museum of Natural History (Washington, D.C.). The reasons for my visit and stay at the USNM were to study type as well as other specimens present in the collection and to do some reference work at the library of the museum. I made several notes and drawings from types as well as other specimens as much as I could. Since the USNM collections consist mainly of well mounted specimens there was no difficulty for my studies. In the USNM types are better protected than in other museums I have visited and each type is in a separate small box. However, a catalog of the types which I saw at the British Museum during my stay there is not available at the USNM. [Editors' note: there is both a type-catalog entry book and a type-specimen card file at the USNM. I'm sorry this was not made clear]. In the USNM I could work till late in the evenings and during holidays where such is not possible at the BMNH. I was lucky during my stay at USNM since several chalcidologists visited during that period and I could meet them (Gary Gibson, John LaSalle, Chris Darling, Jim Woolley, and Steve Heydon). Thus, on the whole my study stay at the USNM was very useful for my research, I met kind, helpful, and interested people, saw much material I wanted to see and was able to borrow some specimens.

John Huber (Biosystematics Research Center, Ottawa, Canada): Collecting Microhymenoptera in Oman.

In late February I had the good fortune to spend 2 weeks in the Sultanate of Oman visiting my sister. She did all the paperwork to get me into this closed country, and, once there, arranged transportation and trips to interesting places. The result was a successful social, collecting, and sightseeing trip.

Although Oman is primarily a desertic country it has a great range of altitude (0-3000m) and considerable ecological diversity. Geographically, it is interesting because the southern half of the country has considerable African affinities (based on studies of vertebrates) whereas the northern half is predominantly southern Palaerctic with some Oriental influence. The centre-west of the country is "The empty quarter" with almost nothing (except oil) and the centre-east is not much better apparently (but no oil).

It rained quite heavily on Feb. 18th, the morning I arrived in Muscat. It had also rained 2 weeks previously. This was the first rain that had fallen in the capital in 3 years. So for my first morning I could not see the low mountains behind the city because of the clouds--an extremely rare event. Because of the rain, the landscape looked a little less lunar than usual, and, with a lot of imagination, looked almost green in the wadis (intermittent water courses). For the north of the country, February is the coolest month and possibly the best for collecting.

I spent the first few hours of the first day recovering from 2 nights of travel before going off with my sister to a conference on trachoma prevention undertaken in Arabic and English at a new conference centre in the capital. This was something to do until I recovered from jet lag and rented a car. It also gave me a good introduction to the people of Oman, because present at the conference were trainees from villages around the country as well as a few big-wigs from the Ministry of Health. The second day I set up some pan traps in a wadi conveniently near my sister's home and took 1 screen-sweep sample. Because of the rain there was quite a few leguminous shrubs that were just beginning to flower and traces of GREEN grass just emerging along the wadi edge as well as the ubiquitous Acacia tortilis.

Two days after I arrived, we flew to Salalah, capital of Dhofar province, about 1000Km south of Muscat. The Salalah plain and the mountains behind it are the only place on the Arabian peninsula that receive a monsoon for about 1 month in late summer. The monsoon mists condense on the mountain slopes and a fairly large and lush monsoon forest can exist only a few kilometres from harsh desert. In August-September the forest is green and the ground is covered with metre high grass. This dies off about October and the ground is bare for the rest of the year although the trees often remain green for much longer. During the 3 days we spent in Dhofar, we rented a car and drove around in the mountains and along the coast collecting and sightseeing. I also set out pan traps under flowering Heliotropium near the beach where we were staying. Altogether, I took 4 screen-sweep samples from vegetation along a freshwater creek on the coast, beach vegetation in Salalah, and 2 sites in the mountains. Acacias were the commonest trees in the desert and along the coast, and many were in flower. I collected some Xylocopa and eumenids that were visiting the flowers while keeping a watchful eye out for camels that were apt to walk up very quietly and quickly from just about anywhere and start to browse on the very trees I was collecting from. Driving in Dhofar is hazardous because of the numerous camels wandering around, often crossing roads just as you come along, or just standing in the middle of them, often just out of vision around a curve.

On our return from Salalah, I continued collecting in the wadis and along the beach (mangrove swamps) near the Gulf Hotel, one of 4 large hotels in the country (3 in Muscat). We made 1 excursion to Wahiba sands, an isolated, 10,000 square km area of dunes in the interior where we collected with a regular as well as a screened net. Heliotropium and Zygophyllum were both in full flower and were crawling with small insects. Larger wasps like Bembix were also common and we collected a few masarids. A Royal Geographical Society expedition was in progress doing a comprehensive scientific survey of the Wahiba sands and we spent a pleasant few hours in their base camp chatting with some of the people about the area. Results of the expedition will be published next year. This should be interesting to entomologists because of the collecting done by W. Büttiker (editor of Fauna of Saudi Arabia).

During my stay in Muscat, I met Michael Gallaher, Advisor to the Oman Natural History Museum, Ministry of National Heritage and Culture, P.O. Box 668, Muscat. Although there are only a few insects on display and almost none for scientific study on the premises (I found only 1 parasitic Hym. in the collection - an evaniid) there is a large scale collecting programme being undertaken by W. Büttiker and M. Gallagher. All material is being sent to the Departement d'Entomologie, Musee d'Histoire Naturelle of Bâle, Augustinerstrasse, 2, 4051, Bâle, Switzerland (where it is sorted by Dr. M. Brancucci and colleagues and sent to over 100 specialists around the world for study).

As far as I know, no one has ever deliberately set out to collect parasitic wasps in Oman. There is only one paper on Hymenoptera (on the specids of Oman in: The Scientific Results of the Oman Flora and Fauna Survey 1977 (Dhofar). The Journal of Oman Studies. Special Report. 1980).

I ended up with 14 screen-sweep and pan-trap samples without knowing what or how much I had collected until I returned to Ottawa and removed the Hymenoptera.

There I found out that I had about 1500-2000 specimens of Chalcidoidea and other Microhymenoptera. Almost all the families of chalcids were represented. I only caught 1 ichneumonid, though. It will be a long time before these can all be mounted up and identified but several of the encyrtids and eupelmids were interesting (Noyes, Gibson, pers. comm.). There were 6 genera of mymarids, Gonatocerus, Polynema, Anagrus, Erythmelus, Anaphes (1), and Alaptus (1). I hope to return once more to Oman next year. Meanwhile M. Gallagher and my sister are continuing to collect and I am sure some

interesting microhymenoptera will be discovered in Oman.

John LaSalle (University of California, Riverside): In the fall of 1985 I spent 3 months in the USSR accompanied by my wife Sarah Lin. The primary purpose of this trip was a study of the collection of Tetrastichinae in the Zoological Institute, Leningrad (ZIL). This is an important collection, due to the material of V.V. Kostjukov. For tetrastichines, the ZIL hold types for about 70 Kostjukov species, as well as species of Kurdjumov (6), Bukowsky (1), and Dzhanokmen (1). The Kurdjumov and Bukowsky specimens were perviously overlooked as being type material, and I am designating several lectotypes. However, the main strength of the ZIL chalcidoid collection is the large and well-curated collection of Encyrtidae built up by V. A. Trjapitzin.

An added benefit to visiting the ZIL was the interaction with four chalcidologists who work there, V.A. Trjapitzin, E.S. Sugonyayev, A.V. Sharkov, and N.D. Voinovich. This concentration of workers clearly makes the ZIL the center of chalcid research in the Soviet Union.

Aside from the scientific aspect of the trip, there were many other interesting activities. Leningrad is a lovely city, with museums, fascinating architecture, and many theaters showing excellent ballet and opera. High points of our sight-seeing included Petrodvorets (the Summer Palace of Peter the Great), Pushkin, the Hermitage (truly one of the great art museums in the world), the Maliy and Kirov theaters, and the circus.

We spent a week in Kishinev, Moldavia, to meet V.V. Kostjukov, the Soviet specialist on Tetrastichinae. The weather was warm enough to allow us to do some good collecting. On the first day Kostjukov collected about 40 tetrastichines, I got about 30, and Sarah collected over 120 (After that we refused to take her collecting with us any more). The country in Moldavia is quite beautiful, with oak-birch forests and lots of apples and grapes.

We also traveled to Moscow to visit the Paleontological Institute and meet A.P. Rasnitsin, and to see the Motschulsky collection at Moscow State University (under the care of A.V. Antropov, a specialist on Sphecidae). The Motschulsky collection is small, and only in fair condition, but is important in that it contains many of his types. Rasnitsin has a large and very interesting collection of fossil Hymenoptera, and a lot can be learned from seeing this material and discussing it with him. Of course, we took the opportunity while there to do some sightseeing, including Red Square and a trip to the Bolshoi Theater.

The most valuable aspect of this trip was the chance to meet our Soviet colleagues. We made many good friends who should prove invaluable for future exchange and studies, and we will always remember the way we were treated with warmth and hospitality throughout our stay.

On the return trip we spent a week at the British Museum (an excellent place for learning about chalcidoids, both from the collection and from the specialists), looking at specimens and visiting with Z. Boucek, J. Noyes, and M. Graham.

### COLLECTIONS

UTAH STATE UNIVERSITY COLLECTION, by Ned Bohart, Department of Biology, Utah State University, Logan, UT 84322. [Ned sends the following information on the chalcidoid holdings of Utah State's collection. This information is modified from a general list of all Hymenoptera]:

The accompanying list represents the present Utah State University holdings of undetermined Chalcidoidea from various geographical areas. Figures are approximations and are subject to change as groups are sent out for study and additional material is acquired. A relatively small percentage of this material has been determined to the generic level. In general, we have avoided long series and stressed diversity.

In order to further the development of Hymenoptera systematics and make our own collection more useful, we are anxious to have as many specimens as possible determined. We solicit requests for material on the usual basis of determinations and the retention of needed duplicate specimens. In instances where the specialist wishes to study only members of one or more groups within a family, we would appreciate a key and sketches for group recognition. An even better method would be for the specialist to accept the entire family, pick out the groups desired, and return the balance identified to genus, insofar as convenient to the specialist. We also invite visitors to our institution to study whatever specimens are of interest. We can provide a certain amount of space and equipment for this purpose.

Unidentified Chalcidoidea in the Utah State University Insect Collection

Family	Geographical Region					Total
	Nearc.	Neotr.	Afrot.	W. Pal.	Austr.*	
Mymaridae	185	54	40	22	12	313
Trichogrammatidae	70	16	0	5	4	95
Eulophidae	2270	2775	695	500	40	6280
Elasmidae	25	80	8	8	0	121
Signiphoridae	2	2	0	1	1	6
Eutrichosomatidae	0	6	0	0	0	6
Encyrtidae	805	600	165	90	75	1735
Eupelmidae	220	110	45	14	58	447
Eucharitidae	210	100	30	4	0	344
Perilampidae	60	30	15	7	0	112
Agaonidae	0	20	85	0	2	107
Torymidae	540	200	70	60	12	882
Aphelinidae	5	25	0	35	14	79
Ormyridae	10	8	0	60	0	78
Pteromalidae	3280	1800	375	710	30	6195
Eurytomidae	1725	850	265	185	32	3057
Chalcedectidae	3	10	0	0	0	13
Chaldididae	1100	500	65	30	45	1740
Leucospidae	0	0	0	4	0	4

\* Mostly Polynesian, Fijian.

HELP

Paul Dessart (Honorary Chalcidologist, Institut Royal des Sciences Naturelles de Belgique, Brussels): "The chalcidologists who breed aphids in order to get parasitoids of their speciality could help me to solve a taxonomic problem whenever they happen to get some undesired ceraphronids instead of their lovely chalcids. In brief, I would like to check the correctness of a sex-association grounded on dimorphic, separately collected specimens.

The male holotype-monotype of "Neoceraphron" macroneurus (Ashmead, 1887) has been bred in Florida from an aphid on Ironwood (probably Sideroxylon mastichodendron R. Hedw.), a fruit-tree common in Florida and the Antilles. After having discarded in 1975 the Aphanogmus fumipennis Th. (1858) that Ashmead had described as female apallotype in 1893, I described in 1979, as supposed true conspecific females, some specimens caught in Ontario in pan traps from Tilia americana and Quercus rubra. If I was correct, the species would thus not be restricted to Florida nor to Ironwood. However, it would be best to get both male and female specimens from an aphid on Sideroxylon, possibly in Florida. I perfectly realize that for a helping Chalcidologist, this would be looking for an unknown species from an unknown aphid ... but maybe some kind colleague is interested in orchard biocenose and has a key to the problem. Many thanks in advance!"

### FORUM

In CHALCID FORUM No. 6, Zdenek Boucek brought up the question of family-group names involving the word gaster in them. After seeing Zdenek's remarks, George Steyskal our resident dipterist and language scholar, took some exception to them and penned his own comments which we include below. After seeing George's comments Zdenek again came to the fore and we include his newest comments on the subject. As the subject seems completely unresolvable we are inclined to create a permanent column in CF just for this issue.

A note on family-group names formed on genus-names in gaster  
by George Steyskal  
(Systematic Entomology Laboratory, USNM, Washington, D.C.)

Of course, all natural languages, including Greek and Latin, are subject to varying usage, either at one time or over a length of time. But if the goal of "stability and universality" enunciated in the Preamble to the International Code of Zoological Nomenclature is to be attained, such variations must be eliminated as far as is reasonably practical according to careful consideration. The great lexicons do cite variation in the stem of words in -gaster, but there is very little doubt that a great preponderance of usage is for the stem gastr-. At least all of the compounds cited in the Greek lexicons are formed with gastr-. The Code has ruled on the matter by citing the stem as gastr- in Appendix D, Table 2B.14, and the name Heterogastrinae is in the Official List of Family-Group Names under No. 352.

In the North American Catalog of Diptera (1965) I find Aulacigastridae, Chrysogastrini, Graphogastrini, Leptogastrinae, Nausigastrini, Pachygastrinae, Strongylostrini, and Stylogastrinae. I am aware of none in Diptera in -gaster-.

In the North American Hymenoptera catalogue, I find in the index already Crematogastrini, Hemigastrini, Microgastrini, Platygastridae, and Strongylogastrini. It would seem only reasonable to place Miscogastrini and Sphegigastrini also in this series. If, however, a family-group name were to be formed on a genus-name ending in -gastera, -gasterum, etc., that would be another matter and the -e- would have to be retained. Incidentally, Latin venter is cited with only the stem ventr-.

Family-group names Miscogasterinae, Sphegigasterini  
by Zdenek Boucek  
(Commonweath Institute of Entomology, BMNH, London)

The Code includes a recommendation (but does not 'rule' on it) in Appendix D on the way to form family-group names from Greek and Latin nouns, with indications of their stems. It is true that it mentions (pp. 220, 221) gaster with recommended genitive gastr-os, but that does not make it incorrect to use gaster-os. Most of my colleagues feel it absurd that, if both forms are correct, a rule should be imposed on us to change an established name as Miscogasterinae to Miscogastrinae. When I consulted the Office of the Secretary of ICZN, he took his Greek dictionary from the shelf and, to our surprise, we found that it gives the genitive gase of gaster as 'gasteros or gastros.'

It is no valid argument if the present North American Hymenoptera catalogue gives the name Platygasteridae. All previous catalogues put the family name as Platygasteridae. It was changed only after Kozlov declared that the name was incorrectly construed, and nobody checked it. My point is that it was correctly construed and therefore, unless the majority agrees on the change, at least in cases where a change has not yet been made, as in Miscogasterinae and Sphegigasterini, this spelling should stand. It seems to be more euphonious also.

Callipteroma: neuter or feminine?  
by Zdenek Boucek

Professor Hirashima recently (1984, Trans. Shikoku Ent. Soc., 16:11-12) expresses an opinion that the name of the encyrtid genus Callipteroma Motschulsky should be regarded as of neuter gender. His main argument is that the latter part of the name comes from the Greek pteroma (neuter), meaning 'that which is feathered' and 'plumage.' He also listed views of some other colleagues, viz. Noyes and Hayat (1984) and Dr. Kuschel, who regarded, on different grounds, the name as of feminine gender. Here is another view.

All who know the type species of Callipteroma can see, although it cannot be proved beyond any doubt, that the name is most probably from the beautiful dark wings with white eye-spots, and not from some 'beautiful plumage' as Dr. Hirashima wants to believe, or from a 'beautiful wing shoulder' as Dr. Kuschel thought. Motschulsky certainly had some knowledge of Greek (and Latin) language and the name apparently was meant to be 'Callipteromma.' Putting it with one -m- (as also in Dalla Torre's Catalogue, pt. 4, Braconidae, but spelt 'Calliopteroma') can be regarded either as an intentional latinization or a misspelling. In either case, under our Code, because the last part is not exactly the Greek spelling (in transliteration), it is regarded as 'latinized' and takes the gender from the ending -a as feminine. Moreover, this is how it was used by its author, Motschulsky. As I hear, this is also the opinion from the Secretary's office of the International Commission on Zoological Nomenclature.

You say Anellus I say Annellus  
by  
D.C. Darling  
(Royal Ontario Museum, Toronto, Canada)

It was recently brought to my attention, through an anonymous review of one of my manuscripts, that I was consistently incorrectly spelling a common morphological term used in the taxonomy of Chalcidoidea. I was initially unconvinced, being unable to recall having ever made a spelling mistake. I referred to the standard reference works, and



received no support for my position! I next turned to two publications I cited as justification for the terms used, in an attempt to pass the buck. I quickly found that they disagreed! Clearly, this is not an ideal situation and perhaps by calling attention to the discrepancies, standardization in useage can be reached.

Under consideration is the spelling of the term for the small ring-like segment or segments between the scape and funicular segments of the antenna of Chalcidoidea; the "anellus", "annelus", or the "annellus" [singular] or the "anelli", "anneli", "annelli" [plural]. I was always of the opinion that there was either one "n" or two "l's" [anelus] or two "n's" and one "l" [annelus]. My reasons for believing this was perhaps tempered by the fact that spelling is never easy and it would be easy if there were either one "n" and one "l" [anelus] or two "n's" and two "l's" [annellus]. My problem was that I could never remember which letter was duplicated, and I would routinely grab the nearest book on my shelf (Graham, M.W.R.de V. 1969. The Pteromalidae of North-Western Europe (Hymenoptera:Chalcidoidea). Bull. Br. Mus. (Nat. Hist.), Entomol. Suppl. 16. 908pp.), resulting in the spelling "anellus". This is the spelling that resulted in my reprimand by the reviewer. It is perhaps a tribute to the epic nature of the above mentioned work that the majority of recent workers use "anellus"; for example a quick perusal of reprints close at hand indicates the use of "anellus" (Darling, Gibson, Grissell, Kamijo, LaSalle, Mani, Noyes, Yoshimoto) or "annelus" (Schauff; I wonder what he is reading when he should have been reading Graham). Many european workers use the term "ring segment", perhaps a wise decision because even I can spell "ring".

It is my current opinion that the correct spelling of the term is "annellus". This spelling is supported by 1) Brown, R.W. 1956. Composition of Scientific words. Smithsonian Institution Press, Washington, D.C. 882pp., reprinted 1978, and 2) Torre-Bueno, J.R. de la. 1937. A Glossary of Entomology. Brooklyn Entomological Society, Brooklyn, N.Y. 336pp. The spelling "anellus" is found in Torre-Bueno but as a genitalic sturcture in the Lepidoptera, whatever they are. Closer to home, "annellus" is used by O.W. Richards (Hymenoptera. Introduction and Key to Families, Second Edition. Handbook Ident. Br. Insects, Vol. 6, pt. 1. 100pp.) in the most comprehensive treatment of the morphology of the order Hymenoptera. Interestingly, Richards is often cited as a reference to morphological features but still the ring segments are referred to as "anelli" (I'm not going to say who did this).

I am convinced that "annellus" should be used, but I submit the matter for consideration by the readership of Chalcid Forum. Perhaps there is something that I have missed in my hasty consideration of this matter. Let's air it out and come to some agreement on the term we are going to use. It really makes no difference to me; all I want is a consensus opinion so I can add the chosen spelling to my spell-checker programme ("programme" is not misspelled, its spelled in Canadian). Finally, let me add that an added advantage of adopting this spelling is that it makes the word easier to spell: two "l's" and two "n's". It will also protect us from reviewers with less familiarity with our terms and a greater familiarity with Latin, whatever that is. There is another solution to this problem. We could revert to the use of the term "ring segment". This term has a long history and is still used by many workers (e.g., Boucek, Dahms, Hedqvist, Riek). What are your thoughts?

I would like to take this opportunity to thank the anonymous reviewer for bringing this to my attention. He must be a Cornell graduate!

An Anellus By Any Other Name,  
or  
Putting more Fun in Your Funicles  
by  
M.E. Schauff  
(Systematic Entomology Laboratory, USNM, Washington, D.C.)

Chris Darling's piece on annelli (see above) rekindled an interest of mine in the subject (by the way, while I thought I was following Graham, I was obviously so confused by the spelling issue that I went off on a whole new tangent). What has interested me for quite some time is the question of exactly what is an annellus (or ring-segment) as opposed to a funicular article, club segment or what have you. In particular, what information regarding evolutionary relationships is or might be contained in certain character state changes such as "antennae with 3 annelli and 4 funicles versus antennae with 2 annelli and 5 funicles"?

The first problem is what makes an annellus different structurally from any other piece of the flagellum. In talking with various other workers, it seems that the only thing that sets off annelli is the lack of multiporous plate sensilla. They may or may not have setae, trichoid sensilla, and campaniform sensilla depending on their size. Size, in fact, appears to be the primary factor involved in the whole question. I have seen annelli so small that they can only be effectively seen with the scanning electron microscope whilst others are so large as to be easily confused with funicle segments (incidentally, I am not being too critical with my use of segment versus articles here so please don't write in and take me to task for that). There is a continuum in sizes and every conceivable intermediate seems to exist. So, is there necessarily any real difference between a small funicle and a large annellus? I think not.

That being the case, what can we or should we make of these things regarding phylogeny? There is no doubt in my mind that in some cases annelli supply us with useful examples of uniquely inherited states. For example, in Chrysocharis the third "annellus" is always quite large and the first two small while in Horismenus the first is large and the second and third small. These conditions seem quite constant among the species and may indicate a difference between the two groups as well as a common ancestry for the included species ( I say "may" because I am not too confident yet that these states are actually unique to either genus, but they serve to illustrate the point).

The problem that seems to crop up all too often in chalcid work is not with unique combinations of characters, but with more subjective character states. For example, how often have you seen something to the effect that "genus A-us can be separated from B-us by having 2 annelli and 5 funicles versus 3 annelli and 4 funicles"? To me that seems like both genera have 7 articles and unless there are any other characters to reinforce the argument that those species come from two distinct evolutionary lineages, I am skeptical to say the least, that they belong in different genera. Carrying the argument one step further we have the case of 3 annelli, 4 funicles, and a 3 segmented club versus 3 annelli, 5 funicles and a 2 segmented club. Again, it seems to me that both groups have 10 articles on the antennae (12 counting the scape and pedicle). I am not arguing here that we ignore differences and only count numbers, but rather that we take a harder look at some of these differences to see if they really justify further complicating chalcid nomenclature and our ideas about relationships by propogating additional generic combinations or continuing to adhere to older ones. I believe that we often obscure relationships by giving too much weight to characters like the relative number of articles, especially when there are apparently no other characters to justify splitting the taxa.

Finally, I would like to add a word of caution regarding the presence of annelli or ring

segments. I have recently been spending a good deal of time doing scanning EM work on the antennae of various entedontine genera. One thing that I have found is that annelli can often "hide" from view. That is, I have found instances of very minute articles which lie under and very close to larger ones (they are often only small "wedges") and are very difficult to see with SEM let alone a compound microscope even under very good conditions. It seems that most of the genera have 3 annelli and only rarely one or two. I would recommend that authors exercise caution when describing how many annelli are found on a particular antenna.

### TECHNIQUES

David Wahl (Washington, D.C.): The search for adequate specimen illumination has always plagued entomologists. While throwing a powerful light source on a specimen has become relatively easy, the entomologist is either cursed with burning fingers and/or blinded by cuticular reflections of a bright point source of illumination. Until recently, the best illumination was provided by lamps utilizing a short-focus parabolic reflector. Fiber optic illuminators provide a cool light source but the problem of unwanted reflections remains. A major step toward solving this problem was the discovery that plastic drawing film, when placed between light source and specimen, provided a cheap and effective means of providing a soft and uniform illumination. A drawback to the technique is that the standard mode of useage entails affixing the drawing film to a base (such as a lump of plasticene) and to move it about on the microscope stage. This is cumbersome and annoying. I have recently hit upon a method of combining drawing film with fiber optics in a manner that is both cheap and space efficient.

The standard fiber optic illuminator comes equipped with a small removable condensing lens on the end of each light pipe. My method is to find a piece of glass tubing slightly larger in diameter than the condensing lens unit and to have a section cut that is roughly 3-4 cm long. A circle of drawing film equivalent in diameter to the glass tube is prepared and glued to one end of the tube (I use Super Glue or the equivalent). This assemblage can then be slipped over the condensing lens and taped securely into place. The final distance of the drawing film relative to the condensing lens will depend on one's taste regarding proximity to the specimen and degree of desired specimen illumination. A soft and uniform illumination is provided and the need for pushing around a screen of drawing film is eliminated. The difference between this style of illumination and that provided by standard lamps must truly be seen to be believed, especially with regard to surface sculpture.

[Editor's note: For those of you who may be wondering, Dr. Wahl is an ichneumonid worker (Yuck!). However, having seen how this works we thought we would throw our prejudice aside this one time and let him contribute this piece.]

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#### MAILING LIST

The following mailing list is the most current, up-to-date list we can produce from the information that has accumulated since CHALICID FORUM No. 2 when last we gave a complete listing of workers receiving CF. As you can see, we now mail CF to upwards of 210 workers, laboratories, and Libraries.

On the last mailing three envelopes were returned to us. Is there anyone who knows what happened to the following people: Dr. Per Sveum (Saupstadsringen 65B, N-7078, Saupstad, Norway), Dr. M. Georges Michaloud (Station Biologique de Paimpont, 35 380 Plelan le Grand, France), and Mr. R. George (8 Saint Peters Street, Duxford, Cambridge CB2 4RP, England)? Also at least two other people have moved and have not informed us of their new addresses. We consider this an abandonment of loyalty to the Chalcid Wars. We have tracked them down and forced them to receive CHALICID FORUM ... this time! Be forewarned, however, that we have better things to do than find deserters. So if YOU want CF let us know where you've moved to.

## MAILING LIST

Dr. U.C. Abdurahman  
Department of Zoology  
University of Calicut  
PIN: 673635  
Kerala  
India.

Dr. Rudolf Abraham  
Zoologisches Institut und  
Zoologisches Museum  
Universität Hamburg  
Martin-Luther-King-Platz 3  
2000 Hamburg 13  
West Germany.

Dr. Mon Mohan Agarwal  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202001, U.P.  
India.

Dr. S. Mashhood Alam  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202001, U.P.  
India.

Mr. Harry Andersen  
Department of Entomology  
University of California  
Riverside, California 92521  
USA.

Dr. R.R. Askew  
Department of Zoology  
University of Manchester  
Manchester  
England.

Dr. J. van den Assem  
Department of Zoology  
Der Rijksuniversiteit Te Leiden  
Kaiserstraat 63, Postbus 9516  
2300 RA Leiden  
The Netherlands.

Pastor P. Alaya D.  
Ave. 19 No. 6009 Plaza c/60 y 62  
Marianao 13  
Ciudad de la Habana  
Cuba.

Dr. Andy Austin  
Waite Agricultural Research  
Institute  
The University of Adelaide  
Glen Osmond, S.A. 5064  
Australia.

Dr. John W. Beardsley  
Department of Entomology  
3050 Maile Way Rm. 310  
University of Hawaii  
Honolulu, Hawaii 96822  
USA.

Beneficial Insects Research Lab  
USDA, Agricultural Research Service  
501 S. Chapel St.  
Newark, Delaware 19713  
USA.

Dr. Frederick Bennett  
Department of Entomology and Nematology  
McCarty Hall  
University of Florida  
Gainesville, Florida 32611  
USA.

Prof. Ferdinando Bin  
Istituto di Entomologia  
Facolta di Agraria  
Universita degli Studi  
Borgo XX Giugno  
06100 Perugia  
Italy.

Dr Zdenek Boucek  
Commonwealth Institute of Entomology  
c/o British Museum of Natural History  
Cromwell Road  
London SW7 5BD  
England.

Dr. B.D. Burks  
159 Fox Road  
Sedona, Arizona 86336  
USA.

Dr. Leopoldo E. Caltagirone  
Division of Biological Control  
University of California  
1050 San Pablo Avenue  
Albany, California 94706  
USA.

Dr. James Carpenter  
Museum of Comparative Zoology  
Harvard University  
Cambridge, Massachusetts 02138  
USA.

Dr. Mary Carver  
CSIRO  
Department of Entomology  
P.O. Box 1700  
Canberra City, ACT 2601  
Australia.

Mr. J. Casas  
Institut für Phytomedizin  
ETH-Zentrum/CLS  
CH-8092 Zurich  
Switzerland.

Mr. Jose Andres Alvarado Castro  
Facultad de Ciencias Biologicas  
Universidad Autonoma de Nuevo Leon  
P.O. Box 2790  
Monterrey, N.L.  
Mexico.

Margarita Ceballos  
Proteccion de Plantas  
Centro Nacional de Salud Animal  
Apartado 10  
San Jose de Las Lajas  
Ciudad de la Habana  
Cuba.

Center of Parasitic Hymenoptera  
Dr. V. K. Gupta  
University of Florida  
3005 S.W. 56th Avenue  
Gainesville, Florida 32608  
USA.

Professor Chao Hsiu-Fu, Chairman  
Biological Control Institute  
Fujian Agricultural College  
Fuzhou, Fujian  
People's Republic of China.

Dr. Kosol Charemsom  
National Biol. Control Res. Center  
Kasetsart University  
P.O. Box 9-52  
Bangkok 10900  
Thailand.

Dr. E. Chiappini  
Istituto di Entomologia  
Facolta di Agraria  
Universita Cattolica del Sacro Cuore  
Via Parmense, 84  
29100, Piacenza  
Italy.

Professor M.F. Claridge  
Zoology Department  
University College, Cardiff  
P.O. Box 78, Park Place  
Cardiff CF1 1XL  
Wales, U.K.

Dr. S. Compton  
Department of Zoology  
and Entomology  
Rhodes University  
Grahamstown, 6140  
South Africa.

Mr. Lonny Coote  
Department of Environmental Biology  
University of Guelph  
Guelph, Ontario N1G 2W1  
Canada.

Mr. Gary Couch  
Department of Entomology  
University of Massachusetts  
Amherst, Massachusetts 01003  
USA.

Mr. Jack Coulson  
Beneficial Insect Introduction Laboratory  
USDA, BBI  
Building 476, BARC-East  
Beltsville, Maryland 20705  
USA.

Dr. E.C. Dahms  
Queensland Museum  
Gregory Terrace  
Fortitude Valley  
Brisbane,  
Australia 4006

Dang Xin-de  
Forest Research Institute  
of Shaanxi Province  
Yangling, Shaanxi  
People's Republic of China.

Dr. D. Chris Darling  
Department of Entomology  
Royal Ontario Museum  
100 Queens Park  
Toronto, Ontario M5S 2C6  
Canada.

A. Davis  
Department of Zoology  
University College London  
Gower Street  
London WC1E 6BT  
United Kingdom.

Mr. L.Loyd Davis  
USDA, ARS (Fire Ant Project)  
P.O. Box 14565  
Gainesville, Florida 32604  
USA.

Mr. Hassan Ali Dawah  
Zoology Department  
University College, Cardiff  
P.O. Box 78, Park Place  
Cardiff CF1 1XL  
Wales, U.K.

Dr. Paul DeBach  
31896 Circle Drive  
South Laguna, California 92677  
USA.

Dr. V. Delucchi  
Ecole Polytechnique Federal  
Universitatstrasse 2  
Zurich  
Switzerland.

Dr. G. Delvare  
Laboratoire de Faunistique  
CIRAD - Center de Recherches  
de Montpellier  
B.P. 5035  
34032 Montpellier Cedex  
France.

- Dr. Luis De Santis  
Museo de La Plata  
Paseo del Bosque  
1900 La Plata,  
Republica Argentina
- Dr. Paul Dessart  
Institut Royal des Sciences Naturelles  
de Belgique  
29 Rue Vautier  
B-1040 Brussels  
Belgium
- Dr. Jim DiGiulio  
Department of Entomology  
Oregon State University  
Corvallis, Oregon 97331  
USA
- Dr. Mikat Doganlar  
Cumhuriyet Universitesi  
Tokat Ziraat Fakultesi  
Entomoloji Anabilim Dalı  
Tokat  
Turkey
- Dr. G. Domenichini  
Direttore Instituto Di Entomologia  
Facolta di Agraria  
Univ. Cattolica del Sacro Cuore  
Via Emilia Parmense 84  
29100 Piacenza  
Italy
- Dr. Atanas Donev  
Chair of Zoology  
University of Plovdiv  
"P. Hilendarski"  
4000-Plovdiv  
Bulgarien
- Dr. K.A. Dzhankmen  
Institute Zoology Academy of Sciences  
Kazakh, SSR  
Alma-Ata  
USSR
- Dr. Marianne Early  
Exploratory Entomologist  
Plant Pest Control Branch  
Hawaii Department of Agriculture  
P.O. Box 22159  
Honolulu, Hawaii 96822  
USA
- Dr. Lester E. Ehler  
Department of Entomology  
University of California  
Davis, California 95616  
USA
- Entomology Library  
British Museum (Natural History)  
Cromwell Road  
London SW7 5BD  
England
- Mr. Ron Facic  
Department of Entomology  
Hall 27 Rm 544 Stop 165  
Museum of Natural History  
Washington, D.C. 20560  
USA
- Dr. S.I. Farooqi  
Division of Entomology  
Indian Agricultural Research Institute  
New Dehli, 110012  
India
- Mr. G. Wilson Fernandez  
Biological Sciences  
Northern Arizona University  
Flagstaff, Arizona 86011  
USA
- Dr. Patricio Fidalgo  
Fundacion Miguel Lillo  
Miguel Lillo 251  
4000-S.M. de Tucuman  
Tucuman,  
Republica Argentina
- DR. Max Fischer  
Zweite Zoologische Abteilung  
(Insekten)  
Naturhistorisches Museum Wien  
Burgring 7 Postfach 417  
A - 1014 Wein  
Austria
- Dr. Ian D. Galloway  
Department of Primary Industries  
Entomology Branch  
Meiers Road  
Indooroopilly  
Brisbane, Queensland 4068  
Australia
- Dr. Dan Gerling  
Department of Zoology  
University of Tel Aviv  
Ramat Aviv, Tel Aviv  
Israel
- Dr. Gary Gibson  
Biosystematics Research Center  
K.W. Neatby Bldg.  
Agriculture Canada  
Ottawa, Ontario K1A 0C6  
Canada
- Mr. M.J. Gijswijt  
Wessel Ten Damstraat 2  
1244 RA Ankeveen  
The Netherlands
- Dr. Stanislaw Glogowski  
Instytut Zoologii Pol. Akad. N.  
ul. Wilcza  
00-679 Warszawa  
Poland
- Dr. A. Gonzalez H.  
Centro de Entomologia y Acarologia  
Inst. de Enseñanza e Investigacion  
En Ciencias Agricolas  
Colegio de Postgraduados  
Chapingo  
Mexico
- Dr. Gordon Gordh  
Division of Biological Control  
Department of Entomology  
University of California  
Riverside, California 92521  
USA
- Dr. M.W.R. de V. Graham  
5, Salisbury Crescent  
Oxford OX2 7TC  
England
- Dr. Deborah Greene  
Department of Entomology & Nematology  
University of Florida  
Gainesville, Florida 32611  
USA
- Mr. William A. Gregory  
Department of Entomology  
University of California  
Riverside, California 92521  
USA
- Dr. E. Eric Grissell  
USDA,ARS  
Systematic Entomology Lab  
c/o U.S. National Museum  
NHB 168  
Washington, D.C. 20560  
USA
- Dr. K. V. Gupta  
(see Center of Parasitic  
Hymenoptera)
- Dr. A. Habu  
1-15-19  
Minami-machi  
Warabi-shi  
Saitam Pref.  
Japan
- Dr. Kenneth Hagen  
Division of Biological Control  
University of California  
1050 San Pablo Avenue  
Albany, California 94706  
USA
- Mr. Jeff Halstead  
Department of Biology  
California State University, Fresno  
Fresno, California 93740  
USA
- Mr. Michael R. Hamerski  
103 Botany and Zoology Building  
1735 Neil Ave.  
Columbus, Ohio 43210  
USA
- Mr. Paul Hanson  
Department of Entomology  
Oregon State University  
Corvallis, Oregon 97331  
USA
- Mr. Christer Hansson  
Zoological Institute  
Department of Systematics  
Helgonavagen 3  
S-223 62 Lund  
Sweden
- Dr. Bradford A. Hawkins  
Dept. of Biology  
University of York  
York YO1 5DD  
England
- Dr. Mohammad Hayat  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202001, U.P.  
India
- Dr. Karl-Johan Hedqvist  
Section of Entomology  
Swedish Museum of Natural History  
S-104 05 Stockholm  
Sweden
- Mr. John Heraty  
Department of Environmental Biology  
University of Guelph  
Guelph, Ontario N1G 2W1  
Canada
- Dr. E.K. Hertveztian  
Zoological Institute Academy of  
Sciences, Armenian SSR  
Erevan 44  
Paruyr Sevast'kstr. 7  
Armenia  
USSR
- Dr. Henry Hespenheide  
Department of Biology  
University of California  
Los Angeles, California 90024  
USA
- Mr. Steve Heydon  
Illinois Inst. of Natural Resources  
Section of Faunistic Surveys  
602 Peabody  
Champaign, Illinois 61820  
USA



Dr. Y. Hirose  
Division of Insect Natural Enemies  
Institute of Biological Control  
Faculty of Agriculture  
Kyushu University  
Fukuoka  
Japan

Dr. John Huber  
Biosystematics Research Center  
K.W. Neatby Bldg.  
Agriculture Canada  
Ottawa, Ontario K1A 0C6  
Canada

Mr. Kim Alan Hoelmer  
Department of Entomology  
University of California  
Berkeley, California 94720  
USA

Dr. Mary E. Hooker  
Department of Biology  
Georgetown University  
Washington, D.C. 20057  
USA

Dr. D.S. (Woody) Homing, Jr.  
Curator of Invertebrates  
The Macleay Museum  
The University of Sydney  
NSW 2006  
Australia

Mr. Huang Jian  
Biological Control Institute  
Fujian Agricultural College  
Fuzhou, Fujian  
People's Republic of China

Dr. Lars Huggert  
Zoological Institute  
Department of Systematics  
Helgonavägen 3  
S-223 62 Lund  
Sweden

Dr. Akey Hung  
Beneficial Insect Intro. Lab.  
USDA-ARS, Bldg. 417, BARC East  
Beltsville, Md. 20705  
USA

International Organization for  
Biological Control  
Dr. J.P. Aeschlimann,  
Secretary General  
CSIRO Biological Control Unit  
335 Ave. Paul Parguel  
34100, Montpellier  
France

Mr. S. Shahiful Islam  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202 001, U.P.  
India

Mrs. Lanan Jeerapong  
Department of Agricultural Extension  
Insect Subdivision  
Bangkhen  
Bangkok 10900  
Thailand

Mr. Peter Bonde Jensen  
Helgenæsvej 3  
DK-8000 Aarhus C  
Denmark

Dr. Norman Johnson  
Department of Entomology  
1735 Neil Ave.  
Ohio State University  
Columbus, Ohio 43210  
USA

Professor K.J. Joseph, Head  
Department of Zoology  
University of Calicut  
Calicut University P.O. Box 673635  
Kerala,  
India

Ing. Vladimír Kalina  
Vyzkumny Ústav Lesnícky  
Vysoká škola zemeľská  
Kostelec n. Čern. lesy  
nr. Phaha  
Czechoslovakia

Dr. K. Kamijo  
Hokkaido Forest Experiment Station,  
Bibai, Hokkaido 079-01  
Japan

Dr. G.J. Kernich  
Department of Entomology  
British Museum of Natural History  
Cromwell Road  
London SW7 5BD  
England

Dr. Mohammed Younus Khan  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202001, U.P.  
India

Dr. E.N. Khlopurov  
Kaluga Paedagogical Institute  
Department of Zoology  
Stepana Razua 26  
Kaluga 248023  
USSR

Dr. Richard P. Kling  
Biological Control Section  
Department of Environmental Resources  
Division of Forest Pest Management  
34 Airport Drive  
Middletown, Pennsylvania 17057-5080  
USA

M. Kostadinoff  
Institut for Plant Protection  
P.O.Box 238  
Sofia  
Bulgaria

Dr. V.V. Kostyukov  
All Union Institute for the Biological  
Method of Plant Protection  
Kishinev, Moldavian S.S.R.  
USSR

Dr. Sonia Kretzschmar  
Fundacion Miguel Lillo  
Miguel Lillo 251  
4000 San Miguel de Tucuman  
Repulica Argentina

Mr. Juan M. Labougle  
Snow Hall  
Department of Entomology  
University of Kansas  
Lawrence, Kansas 66045  
USA

Mr. Kenneth Lakin  
Department of Entomology  
University of California  
Riverside, California 92521  
USA

Mr. N.J. Larter  
Imperial College Field Station  
Silwood Park  
Ascot  
Berkshire SL5 7PY  
England

Mr. John LaSalle  
Division of Biological Control  
Department of Entomology  
University of California  
Riverside, California 92521  
USA

Dr. Lynn M. Lebeck  
c/o Dr. Marshall W. Johnson  
Department of Entomology  
University of Hawaii  
3050 Maile Way  
Honolulu, Hawaii 96822  
USA

Prof. Li Xueliu  
Department of Plant Protection  
Zhejiang Agricultural University  
Hangzhou  
People's Republic of China

Mr. Liao Ding-shi  
Institute of Zoology  
Department of Insect Taxonomy  
and Faunology  
Academia Sinica  
Beijing  
People's Republic of China

Librarian Netherlands  
Entomol. Verenigen  
Plantage Meddenlaan 64  
1018 DH  
Amsterdam  
The Netherlands

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England

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USA

Library, National Biological  
Control Research Center  
Banpot Napometh, Director  
Kasetsart University  
P.O. Box 9-52  
Bangkok 10900  
Thailand

Dr. K.S. Lin  
Department of Applied Zoology  
Taiwan Agricultural Research Institute  
189 Chung-cheng Road  
Wufeng, Taichung Hsien  
Taiwan 431  
Republic of China

Dr. Norman Lin  
1487 East 37th Street  
Brooklyn, New York 11234  
USA

Dr. M.S. Mani  
Marine Biology Section  
Zoological Survey of India  
Off Santhome High Road  
Madras 600 028  
India

Dr. Lubomir Masner  
Entomology Research Center  
Research Branch, Agriculture  
Ottawa, Ontario K1A 0C6  
Canada

Ljuba Mihajlovic  
Faculty of Forestry  
Kneza Viseslava 1  
11000 Belgrade  
Yugoslavia

Dr. Jeff Miller  
Department of Entomology  
Oregon State University  
Corvallis, Oregon 97331  
USA

Dr. John C. Moser  
U.S. Forest Service  
Southern Forest Experiment Station  
2500 Shreveport Highway  
Pineville, Louisiana 71360  
USA

Dr. M.K. Mukerjee  
School of Entomology  
St. John's College  
Agra-282002  
India

Dr. Y. Murakami  
Division of Insect Natural Enemies  
Institute of Biological Control  
Faculty of Agriculture  
Kyushu University  
Fukuoka  
Japan

Dr. S.N. Myartseva  
Institute of Zoology  
Turkmenian Academy of Sciences  
Ashkabad 744000  
Engels Str. 6  
Turkmenian SSR  
USSR

Dr. Sudha Nagarkatti  
National Center for Biological Control  
Indian Institute of Horticultural Research  
142-III Main Road  
Gangalahally Layout  
Bangalore 5600332  
India

Dr. H. Najaraja  
Indian Station  
Commonwealth Institute of Biological Control  
Post Bag  
Hebbal Agricultural Farm P.O.  
Bangalore 560 024  
India

Dr. T.C. Narendran  
Department of Zoology  
University of Calicut  
Kerala 673-635  
India

Abbas Ali Nasrollahi  
Iranian Research Organization  
for Science & Technology  
P.O. Box 13145/1446  
Tehran 15815  
Iran

Dr. Ian D. Naumann  
CSIRO  
Division of Entomology  
P.O. Box 1700  
Canberra City, ACT 2601  
Australia

Mr. Barry S. Nichols  
7004 Ethan Allen Way  
Louisville, Kentucky 40272  
USA

Dr. John Stuart Noyes  
Department of Entomology  
British Museum of Natural History  
Cromwell Road  
London SW7 5BD  
England

Dr. E.R. Oatman  
Division of Biological Control  
University of California  
Riverside, California 92521  
USA

Dr. Steven Orzack  
Museum of Comparative Zoology  
Harvard University  
Cambridge, Massachusetts 02138  
USA

Dr. Jong Cheol Paik  
Department of Entomology  
Institute of Agricultural Sciences  
Office of Rural Development  
Suwon 170  
Korea

Dr. Woon Hah Paik  
99-22 Seodun-dong  
Suwon 170  
Korea

Dr. A. Panis  
Station de Zoologie et  
de Lutte Biologique  
Route de Biot  
06560 Valbonne  
France

Professor Pang Xiongfei  
Department of Plant Protection  
South China Agricultural College  
Guangzhou  
People's Republic of China

Mr. J. Patrick Parkman  
Department of Entomology  
and Nematology  
3085 McCarty Hall  
University of Florida  
Gainesville, Florida 32611  
USA

Mr. Mario A. Rodriguez Perez  
Facultad de Ciencias Biologicas  
Universidad Autonoma de Nuevo Leon  
P.O. Box 2790  
Monterrey, N.L.  
Mexico

Dr. Gabriela Perez  
Laboratoire D'Ethologie et  
Sociobiologie  
Av. Jean Baptiste Clement  
93430 Villetaneuse  
Paris  
France

Dr. V.I. Pilipyuk  
Lazarevskaja Experimental Station  
All-Union Institute of Plant Protection  
354100, Sochi, L-101  
Black Sea  
USSR

Dr. John Pinto  
Division of Biological Control  
Department of Entomology  
University of California  
Riverside, California 92521  
USA

Dr. Bernard Pintureau  
Station de Zoologie et de  
Lutte Biologique  
J.N.R.A. -37, Bd du Cap  
06 602 Antibes  
France

Mr. G. Platner  
Division of Biological Control  
Department of Entomology  
University of California  
Riverside, California 92521  
USA

Dr. Vladimir B. Polacek  
Ul. Pionyr, 2  
25001 Brandys nad Labem  
Czechoslovakia

Andrew Polaszek  
Commonwealth Institute of Entomology  
56 Queen's Gate  
London SW7 5JR  
United Kingdom

Dr. G.L. Prinsloo  
Plant Protection Research Institute  
Dept. Agricultural & Technical Services  
Private Bag X134  
Pretoria  
South Africa

Dr. Wojciech J. Pulawski, Chairman  
Department of Entomology  
California Academy of Sciences  
Golden Gate Park  
San Francisco, California 94118  
USA

Dr. Gui Shibang, Chief  
Biological Control Laboratory  
Chinese Academy of Agricultural  
Sciences  
Beijing  
People's Republic of China

Dr. Alexander P. Rasnitsyn  
Institute of Paleontology  
Academy of Sciences USSR  
Profsoyuznaya 33  
Moscow 117321  
USSR

Mr. Jean-Yves Rasplus  
I.N.R.A. Station de zoologie  
Laboratoire de Faunistique ecologique  
Route de Saint-Cyr  
F-78000 Versailles  
France

Dr. M.S. Abdul Rassoul  
Natural History Research Center  
University of Baghdad  
Bab-al-Muadham  
Baghdad  
Iraq

Mr. Ren Hui  
Guangdong Entomological Institute  
87 Xingang Road  
Guangzhou, 510081  
People's Republic of China

Dr. Tova Rivnay  
"The Israel Cohen Institute"  
for Biological Control  
Citrus Marketing Board  
27 Keren Kayement St.  
Rehovot 76345  
Israel

Mr. Mike Rose  
Department of Entomology  
Texas A & M University  
College Station, Texas 77843-2475  
USA

Dr. David Rosen  
Department of Entomology  
Faculty of Agriculture  
Hebrew University  
P.O. Box 12  
Rehovot,  
Israel

Mr. L.P. Rozanov  
Uzbek Quarantine Laboratory  
Tashkent, Uzbekistan  
USSR

Dr. K.A. Sahad  
Plant Protection Division  
Agriculture Complex  
Farmgate  
Dhaka-15  
Bangladesh.

Dr. Michael E. Schauff  
USDA,ARS  
Systematic Entomology Lab  
c/o U.S. National Museum, NHB 168  
Washington, D.C. 20560  
USA.

Dr. Udo Sellenschlo  
Hygienisches Institut  
Pest Control  
Marckmannstrasse 129a  
D-2000 Hamburg 28  
West Germany

Serials Department  
David W. Lupton, Head  
Colorado State University  
Fort Collins, Colorado 80523  
USA.

Dr. S. Adam Shaffee  
Department of Zoology  
Aligarh Muslim University  
Aligarh 202001, U.P.  
India.

Dr. A.V. Sharkov  
Zoological Institute  
Academy of Sciences  
Leningrad, 199164  
USSR.

Mr. Shi Da-san  
Shanghai Institute of Entomology  
Academia Sinica  
225 Chingqing Road (South)  
Shanghai 200025  
People's Republic of China.

Dr. M. Skrzypczynska  
Institute of Forest Entomology  
Agricultural Academy  
31-425 Krakow, Al. 29 Listopada 46  
Poland.

Dr. D. B. Smith  
USDA,ARS, E511  
Systematic Entomology Laboratory  
c/o U.S. National Museum  
NHB 168  
Washington, D.C. 20560  
USA

Dr. J.W. Smith Jr.  
Department of Entomology  
Biological Control Center  
Texas A & M University  
College Station, Texas 77843  
USA.

Mr. Martin Sorg  
Zoologisches Institut der  
Universität Köln  
I. Lehrstuhl Exp. Morph.  
5 Köln 41, Weyertal 119  
West Germany.

Ms. N. Sorokina  
All Union Plant Protection Inst.  
Pobelskii Chanssee 3  
Pushkin 6  
Leningrad  
USSR.

Dr. Lionel Stange  
Florida Department of Agriculture  
and Consumer Services  
p.o. Box 1269  
Gainesville, Florida 32602  
USA.

Dr. J.R. Steffan  
c/o Museum National d'Histoire Naturelle  
Entomologie Generale et Applique  
45 Rue de Buffon  
75005 Paris  
France.

Dr. Nadezhda Storozheva  
Institute of Biology and Pedology  
Far East Science Center  
Academy of Sciences USSR  
Vladivostok, 690022  
USSR.

Dr. B.R. Subba Rao  
Commonwealth Institute of Entomology  
c/o British Museum of Natural History  
Cromwell Road  
London SW7 5BD  
England.

Dr. E.S. Sugonyayev  
Zoological Institute  
USSR Academy of Sciences  
Leningrad V-164  
USSR.

Dr. Daniel J. Sullivan, S.J.  
Department of Biological Sciences  
Fordham University  
Bronx, New York 10458  
USA.

Dr. Yoshito Suzuki  
Department of Biophysics  
Faculty of Science  
Kyoto University  
Kyoto 606  
Japan.

Dr. Tetsusaburo Tachikawa  
Entomology Laboratory  
College of Agriculture  
Ehime University  
Tarumi-Cho, Matsuyama, 790  
Japan.

Dr. H. Taguchi  
Entomology Laboratory  
College of Agriculture  
Ehime University  
Matsuyama 790  
Japan.

Mr. Tang Yu-ying  
Laboratory of Biocontrol  
Department of Plant Protection  
Fujian Agricultural College  
Fuzhou, Fujian  
People's Republic of China.

Dr. Luis O. Tejada  
Instituto Tecnológico y de  
Estudios Superiores de Monterrey  
Sucursal de Correos "J"  
64849 Monterrey, N.L.  
Mexico.

Dr. Vincent J. Tepedino  
USDA,ARS  
Bee Biology and Systematics Lab  
Utah State University UMC 53  
Logan, Utah 84322  
USA.

Dr. Kevin Thorpe  
Department of Plant Science  
California State University  
Fresno, California 93740  
USA.

Dr. S.L. de la Torre  
Dpto. de Zoología  
Facultad de Biología  
Universidad de la Habana  
Ciudad de la Habana  
Cuba.

Dr. Henry Townes  
American Entomological Institute  
3005 SW 56th Ave.  
Gainesville, Florida 32608  
USA.

Dr. V.A. Trjapitzin  
Zoological Institute  
Academy of Sciences, USSR  
Leningrad,  
USSR V-164.

Teja Tschamtké  
Zoologisches Institut  
Kornblumenstrasse 13  
D-7500 Karlsruhe  
West Germany.

Dr. Sandrine Ulenberg  
Plant Protection Service  
P.O.Box 9102  
6700 Hc Wageningen  
The Netherlands.

Dr. Errol Valentine  
DSIR  
Entomology Division  
Private Bag, Auckland  
New Zealand.

Dr. P Vargas  
Departamento de Protección Vegetal  
INIA. Apdo. 240  
14071 Cordoba  
Spain.

Dr. M. Verma  
Department of Zoology  
Bareilly College  
Bareilly 243 001 U.P.  
India.

Dr. Gennaro Viggiani  
Istituto di Entomologia Agraria  
dell'Università di Napoli  
Via Università 100  
80055 Portici (NA)  
Italy.

Dr. Veli Vikberg  
Liinalammintie II as.6  
SF-14200 Turenki  
Finland.

Mr. D.L. Vincent  
Beneficial Insect Intro. Lab.  
USDA-ARS Bldg. 417, BARC East  
Beltsville, Maryland 20705  
USA.

Dr. Jean Voegele  
Station de Zoologie et  
de Lutte Biologique  
I.N.R.A. 37, Bd du Cap  
06 600 Antibes  
France.

Mrs. Natalia D. Voinovich  
Zoological Institute  
Academy of Sciences  
Leningrad V-164  
USSR.

Dr. David Wahl  
American Entomological Institute  
3005 SW 56th Ave.  
Gainesville, Florida 32608  
USA.

Dr. G. H. Walter  
Department of Zoology  
University of the Witwatersrand  
1 Jan Smuts Avenue  
Johannesburg  
South Africa.

Rev. Anthony Watsham  
 St. Ignatius College  
 P.O. Box 1780  
 Harare City  
 Zimbabwe

Dr. Robert Wharton  
 Department of Entomology  
 Texas A & M University  
 College Station, Texas 77843  
 USA

Dr. J.T. Wiebes  
 Rijksmuseum van Natuurlijke  
 Histoire  
 Raamsteeg 2, Postbus 9517  
 2300 Ra Leiden  
 The Netherlands

Mrs. Amporn Winotai  
 National Biol. Control Res. Center  
 Kasetsart University  
 P.O. Box 9-52  
 Bangkok 10900  
 Thailand

Dr. John H. Werren  
 Entomology Department  
 University of Maryland  
 College Park, Maryland 20742  
 USA

Dr. James Woolley  
 Department of Entomology  
 Texas A & M University  
 College Station, Texas 77843-2475  
 USA

Mr. Naoya Yashiro  
 Entomological Laboratory  
 Agricultural Faculty  
 Osaka Prefectural University  
 Mozu-ume-machi  
 Sakai City, 591  
 Japan

Dr. Valentina A. Yasnosh  
 Georgian Institute for Plant  
 Protection  
 380062 Tbilisi, Georgia  
 Chavchvadze 17  
 USSR

Dr. Carl Yoshimoto  
 Entomology Research Center  
 Research Branch, Agriculture  
 Ottawa, Ontario K1A 0C6  
 Canada

Mr Mohammad Yousuf  
 Department of Zoology  
 Aligarh Muslim University  
 Aligarh 202001 U.P.  
 India

Dr. M.D. Zerova  
 Institute of Zoology  
 Academy of Science  
 Lenina Str. 15  
 252 030 Kiev  
 Ukrainian SSR  
 USSR

Mr. Gregory Zolnerowich  
 Department of Entomology  
 Texas A & M University  
 College Station, Texas 77843  
 USA