

# CHALCID FORUM

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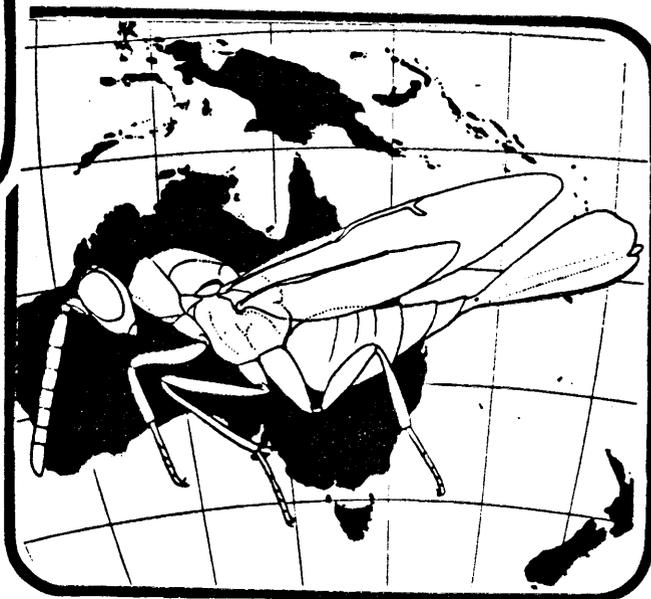
A Forum to Promote Communication  
Among Chalcid Workers

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## EDITORS' NOTES

Better late than never - the new official motto of CHALCID FORUM. We hope that the results will justify the wait.

Included in this issue is a new section, "BOOK NOTICES/REVIEWS". Two books are reviewed, the Ph.D. thesis of Jean-Yves Rasplus (157), and the long awaited for "Australasian Chalcidoidea" by Zdenek Bouček (16). We heartily congratulate both individuals! The masthead of this issue was liberated from the dust jacket of Dr. Bouček's *magnus opus*, in honor of his work. The chalcidoid illustrated is a female of the genus *Cameronella* Dalla Torre (Pteromalidae: Colotrechinae). One can only wonder whether the British fondness for darts is the reason why this genus was selected to illustrate the dust jacket? For the convenience of CHALCID FORUM readers we have included an order form for Dr. Bouček's book.

Readers will note the numbers following names of individuals in this issue. The numbers refer to the directory listings in "Chalcid Forum Directory (March 1988)", and updates in this issue.

Finally, special apologies to Gérard Delvare for neglecting to include him in the directory; we apologize for any other omissions or errors, which will be corrected as we are informed of them.

RESEARCH NEWS

Harry Anderson (8). Presently working on a revision of the Nearctic *Halticoptera* (Pteromalidae) north of Mexico.

Andy Austin (12). My current research projects are all on non-chalcidoid groups, viz., Braconidae and Scelionidae. However I am still rearing parasites of spider eggs as a side-line project and this does yield occasional chalcidoids. Recent trips have included museum visits to ANIC (February 1988) and the collections in Brisbane (May 1988), and a seven days collecting trip in the Townsville area (Q'ld.) using malaise traps, yellow pans and sweeping (May 1988). Townsville is surrounded by disturbed tropical savannah, but within an hour's drive there is pristine rainforest and wet sclerophyll which is where I spent most of my time. Having only just got back to Adelaide, I cannot say much about the samples I have, except that there is plenty of material to sort this winter!

John Beardsley (13). Presently working with Carl Yoshimoto on a manuscript covering the Chalcidoidea of Hawaii. I will be junior author.

James Carpenter (20). I may be going to Argentina in January, where I will probably not be able to avoid collecting some chalcidoids. How about spelling questionnaire correctly? Or is this another Canadian mutation? [Ed. note: unlike Americans, Canadians believe in conservation, and in this spirit we decided to conserve one "n". You may say that the saving of a single "n" is not worth the bother, but that "n" was used to spell your name correctly. Upon reflection, you are right, we shouldn't have saved it!]

CHAO, Hsiu-fu (= Zhao Xiufu) (24). We have a collection of nearly 200,000 specimens of parasitic Hymenoptera. We welcome visitors to our institution to study whatever specimens are of interest. We can provide space and equipment for this purpose.

Andrew Davis (37; see new address). [Ed. note: Andrew wins the first-annual "why unpack your bags" award for the most moves within the life of CHALCID FORUM. We suspect that Andrew really is a spy, or an international jewel thief and is using chalcidology as a cover.]

I have had to leave France without finishing work begun on *Trichogramma* [Ed. note: ah ha! - the authorities must have been closing in]. Professor Coineau, working with soil mites at the Musée de l'Histoire Naturelle in Paris, recently discovered *Globulencyrtus* (Encyrtidae) endoparasites in mites from south west France. He and I hope it may still be possible to collaborate on a study of this material. It is interesting to know that some chalcidoids exploit acarine hosts - and surprising that the Acari are not more often hosts for hymenopteran parasitoid species.

Gary Gibson (60). I continue to study eupelmids and make foolish attempts to try to come to some meager understanding about higher relationships and classification of the Chalcidoidea. It keeps me off the streets but is resulting in a huge liquor bill. On top of everything, last year I got stuck

with being Project Leader of the Beneficial Insects Project at BRC, which is definitely not 'beneficial' for my research productivity (O.K. out there, stop cheering).

I finally submitted for publication my revision of the world genera of Calosotinae and Metapelmatinae. Eight genera are recognized in Calosotinae (4 new) and four genera in Metapelmatinae (2 new); a list of described species is included for all genera, with references to synonymy and other nomenclatural changes. A major part of the work involves a phylogenetic analysis of the monophyly and relationships of Eupelmidae. For reasons I won't go into here, the analysis included Eupelmidae (Calosotinae, Eupelminae, Metapelmatinae), Tanaostigmatidae, Encyrtidae, Aphelinidae, and Pteromalidae (Cleonyminae). Twenty-two characters were studied, which resulted in the conclusion that Eupelmidae represents a grade-level taxon; there is no evidence that Eupelmidae is monophyletic, but then again, the analysis was not comprehensive enough to prove that it isn't. Just prior to completing the study, John LaSalle was kind enough (???) to send me representatives of various genera of Eriaporinae so that I could include this subfamily as part of Aphelinidae. Lo and behold, two of the characters indicate that Eriaporinae are incorrectly classified in Aphelinidae. Luckily, the infrafamilial classification of Aphelinidae is not my problem.

I continue to build a world collection of Eupelmidae, toward an eventual generic revision of the Eupelminae for the Nearctic region. The Eupelminae are by far the most diverse subfamily, and while I will only revise the Nearctic fauna generic concepts will have to be based on the world fauna to be meaningful. However, for the immediate future I have had enough of genera and want to revise the Nearctic species of *Macroneura* next year.

Eric Grissell (66) and Mike Schauff (164). We are beginning a revision of the New World species of the eurytomid genus *Bephratelloides*. The genus has now been reported from Florida and Hawaii, and has become a pest on some exotic fruits. We would very much appreciate seeing any specimens that readers of CF may have in their collection.

Anthony van Harten (75). Current projects include an inventory of Cape Verde Islands (Aphelinidae, Trichogrammatidae and Mymaridae with Dr. Viggiani, Portici; all other families with Mr. Gijswijt, Ankeveen).

Mohammad Hayat (77). I recently completed a (preliminary) revision of *Encarsia* species from India and adjacent countries. This should be published in the beginning of 1989. But already I know of two species which could not be included, which possibly should go into a short "Appendix" to the paper. The readers may call this a 'lack of communication', but I would say that such things do happen. Since coming out of the monotonous job (looking at species of one genus again and again over a long period of time) I have planned to look at encyrtids. So readers may look forward to seeing something (quite uninteresting!) on Indian encyrtids in the near future. I have also a few 'small' papers which should be published this year or early in 1989.

D. S. (Woody) Horning (86). In a recent issue, I asked readers if anyone was interested in identifying a large collection of 1825 -1835 collection of

Chalcididae from Cuba. Surprisingly, one reader responded, Jeffrey Halstead from Fresno, California. He has the specimens at the moment, and I will let you know the results of his study in due course. Meanwhile I have a reasonable collection of Australian Chalcididae that need to be identified. Is there anyone amongst the Chalcidoidea group that would be willing to look at this collection?

Huang Da-wei (87). I expect to finish my Ph.D. degree at the end of 1989. I am interested in the phylogenetics of Chalcidoidea and would like to continue my research after getting my Ph.D. I am also interested in morphology, biology, behaviour and biological control. Because there are no funds to support a postdoctoral fellow at the Academia Sinica, Beijing, I am looking for an opportunity elsewhere as a postdoctoral fellow or visiting scholar. If anyone has such a position, or knows of opportunities that I could apply for, I would appreciate it if they would contact me. References will be furnished upon request.

Huan Jian (88). Having finished my M.Sc. thesis, "A survey and identification of citrus armored scale parasites in Fujian Province of China", in 1987, I am now studying in the Biological Control Institute of Fujian Agricultural College for my doctorate under the guidance of Prof. Chao Hsiu-fu. I plan to do some systematic studies on the family Aphelinidae for my Ph.D. dissertation. I hope that I can get in contact with chalcid workers concerned.

John Huber (89). I am working on a review of *Anaphes* for North America in between other things. I am also editing a manual to be published next year based on a workshop on Hymenoptera identification held at BRC over the past three years. Further longer term projects include preparing a revised key to the mymarid genera of N. America and some short papers on new taxa. A lot of time is spent building up and curating the chalcidoid collection (the half that GG does not work on).

David Johnson (96). I am finishing a paper for publication this year, entitled "Eucharitidae (Hymenoptera: Chalcidoidea): Biology and Potential for Biological Control". This is mainly a review, and much of this material was presented at the January 1988 meeting of the Southeastern Branch of the Entomological Society of America (Raleigh, N. C.).

Beche Lal (109). The following is abstracted from my Ph.D. thesis, "Taxonomic studies on seed inhabiting chalcids from India" (awarded from P.G. School, I.A.R.I., New Delhi-110012, in 1987): "Taxonomic studies on seed inhabiting chalcids from India" deals with a taxonomic treatment of phytophagous chalcids belonging to two families, viz., Eurytomidae and Torymidae. The work starts with a brief introduction highlighting the subject matter and purpose of undertaking the study, followed by economic importance, and an up to date review of literature on both families. Apart from the procedures adopted, there is a chapter devoted to explanation of morphological characters utilized in the text. The main chapter includes a detailed taxonomic study of 16 genera, of which 6 belong to Eurytomidae and 10 to Torymidae. A total number of 34 species species have been studied, which contain 21 species under

Eurytomidae and 13 species in Torymidae. One genus, *Neoeukoebelea* was erected with *mayarami* as the type species. Ten new species have been described, these new species are *Bruchophagus delhensis*, *B. neogibbus*, *B. pararoddi*, *B. punjabensis*, *Tetramesa shillongensis*, *T. burksi*, *T. karnalensis*, *T. mukerji*, *T. testacepoda*, and *Neoeukoebelea mayarami*. Genitalic studies of 17 species; have been made in detail to strengthen the taxonomic characters. Identification keys for all the genera and species studied were prepared. Descriptions were supplemented with 179 test figures.

Two genera, viz., *Parapilkhanivora* Farooqi and Menon, and *Pilkhanivora* Farooqi and Menon, along with their respective species were synonymized with *Camarothorax* Mayr.

A brief discussion on the classification and placement of certain genera and species within their respective groups together with the significance of genitalic characters has been incorporated. In the end a complete bibliography comprising 216 references has been appended.

Lin Nai-guan (116). My Ph.D. thesis on the systematics of Trichogrammatidae is now in the last step of preparation and I hope it can be finished by the end of this fall. From my preliminary study, it has been found that there are about 29 genera, and more than 90 species of Trichogrammatidae in my collection, which is 14 genera more than I reported in CHALCID FORUM no. 8. The genera and species number are as follows: *Aphelinoidea* (2 spp.), *Asynacta* (1 sp.), *Brachygrammatella* (1 sp.), *Chaetostricha* (3 spp.), *Doirania* (1 sp.), *Epoligosita* (7 spp.), *Gnorimogramma* (1 sp.), *Hayatia* (2 spp.), *Japania* (1 sp.), *Lathromeris* (2 spp.), *Lathromeroidea* (3 spp.), *Lathromeromyia* (2 spp.), *Megaphragma* (5 spp.), *Mirufens* (1 sp.), *Neocentrobiella* (1 sp.), *Oligosita* (20 spp.), *Ophioneurus* (3 spp.), *Paracentrobia* (5 spp.), *Poropoea* (1 sp.), *Prestwichia* (1 sp.), *Probrachista* (2 spp.), *Prosoligosita* (1 sp.), *Pterygogramma* (1 sp.), *Trichogramma* (10 spp.), *Trichogrammatoidea* (2 spp.), *Tumidiclava* (3 spp.), *Ufens* (4 spp.), *Uscana* (3 spp.), *Xiphogramma* (1 sp.).

Banpot Napompeth (133). Dr. Yoshimi Hirose of Kyushu University and his co-workers have just completed a project in Thailand working at NBCRC on the search for parasites of *Thrips palmi*. A trichogrammatid parasitoid was collected and brought back to Japan for further study and probable introduction later on.

Two consignments of an encyrtid nymphal parasite, *Psyllaephagus* sp. nr. *rotundiformis*, were introduced to Thailand in November 1987 and April 1988 for biological control of the leucaena psyllid which is now spreading from the Pacific area to the continental Southeast Asia and the Indian subcontinent.

T. C. Narendran (134). My revision of Oriental Chalcididae is progressing and I hope to bring out my monograph by the end of spring in 1989. Descriptions of some new taxa and redescriptions of several little known ones were already completed. Innumerable new synonyms as well as new combinations have already been discovered based on studies of primary types.

Ian Naumann (136). Editing the *Insects of Australia* textbook will be a preoccupation well into the second half of this year. This is turning into a

longer haul than any of us expected. Dust is accumulating on half finished manuscripts on *Enoggera* (Pteromalidae) and Cerocephalinae, and will get deeper. One of our scientists has just returned from three months collecting in North Queensland (Atherton Tableland) - he ran Malaise and pan traps as well as flight intercept/gutter traps, so we have plenty of jars to sort for goodies.

Andre Panis (144). Current projects include: beginning to work toward mass culture of chalcid parasites of soft scales, at low cost; an interesting species of Trichogrammatidae on soft scale; and a new parasite (Encyrtidae) of coccinellid to be described.

Gerhard Prinsloo (153). Two taxonomic studies have just been completed and the results submitted for publication: the first deals with the southern African species of *Rhopus* and *Astymachus* (the two have nothing to do with one another), the second with the genera and some new African species of the encyrtid tribe Aenasiini. Feeling somewhat behind the times these days, I decided to include a phylogenetic analysis with some cladograms in the latter study. Initially, all went well, but six months and 40 character states later I found myself in a state of total confusion and I had to conclude that phylogeny does not apply to encyrtids. I left things there, and now feel even more behind the times. [Ed. note: welcome to the club.]

My catalogue of Afrotropical Chalcidoidea is taking shape. All the small and easy families have been completed and ready to be hauled out of the computer for printing. The pteromalids and eulophids remain the biggest problem.

David Rosen (162). Current projects include:

- genetic improvement of natural enemies: Selection for pesticide resistance in species of *Aphytis*;
- Aphelinidae and Aphidiidae of Israel;
- Species of *Aphytis* of the world.

Andrey V. Sharkov (168). On July 26, 1988, a prominent specialist on the Chalcidoidea, Vladimir Alexandrovich Trjapitzin, was sixty.

During his 36 years at the Zoological Institute, USSR Academy of Sciences (Leningrad), V. A. Trjapitzin has published 180 papers on taxonomy, faunology, biology, and morphology of Encyrtidae, including reviews of encyrtid fauna of Primorski territory, Caucasus, a revision of the genera of Palaearctic Encyrtidae with a key, reviews of immature stages and host-parasite relations in Encyrtidae with hypothetical ways of their evolution. He has worked out the principles of comparative morphology of encyrtids and proposed a new system of classification of the family. Together with G. Gordh he has published a revision of the genera of Nearctic Encyrtidae with a key, and a series of papers on encyrtids of North and Central America. Recently, V. A. Trjapitzin prepared for publication a key to Palaearctic Encyrtidae, including about 1260 species from 211 genera, that will be published in 1989. Besides Encyrtidae he has worked on Perilampidae, Eucharitidae, Eupelmidae, Eulophidae, Elasmidae, Signiphoridae, and Mymaridae. He also carries out research on biological control and introduction of entomophagous insects in

the USSR. He takes part in expeditions of the Zoological Institute in different regions of the USSR and abroad.

In the USSR, V. A. Trjapitzin is chief of the scientific school of chalcidologists (founded by M. N. Nikolskaya), and a coordinator of chalcidological research.

From the pages of CHALCID FORUM I want to congratulate V. A. Trjapitzin with his anniversary, and to wish him good health, every happiness and every success in his life and work. [The editors of CHALCID FORUM would also like to wish a belated happy 60th birthday to Dr. Trjapitzin, on behalf of ourselves and the rest of his colleagues throughout the world. We are happy to hear that it is only his 60th birthday, which means Dr. Trjapitzin has many more years of productive research and development of young chalcidologists before him.]

Sheng jin-kun (169). I would like to write a book about "Economic Insect Fauna of Jiangxi, Chalcidoidea (Hymenoptera)" in the future, and with my students want to make some investigations into the parasites of pests in paddy fields. I also want to participate in the Congress of Entomology of East China, which will be held in Anhui Province, in October, 1988.

Roy Snelling (178). I will be initiating a study of the genus *Conoaximia*, parasites of the ant genus *Azteca*. Any material in this genus would be welcome, as would any observations on biology and behaviour. Apparently these wasps parasitize *Azteca* queens while they are attempting to establish new colonies.

Harold B. Specht (179). Dr. Kenneth Neil and I have been rearing *Trichogramma* spp. for release in sweet corn to control the earworm and fall armyworm. We have been encountering the usual problems, particularly getting peak production to coincide with the need for protection of the crop.

Lionel A. Stange (180). Projects include fig wasps of Florida and parasites of cirrus root weevils. I also plan trips to South Africa in January of 1988, and possibly to Venezuela in July of 1988.

Daniel J. Sullivan (183). Current research includes aphid hyperparasites. I am on sabbatical during the 1988/89 academic year from Fordham University, to do research in South America with Dr. Anthony Bellotti in the Cassava Entomology Program at the Centro Internacional de Agricultura Tropical (CIAT) in Cali, Colombia.

John Werren (208). Current projects include genetics of *Nasonia vitripennis*, study of genetic elements which alter sex ratio in this wasp, including the 'psr' element, which is an extremely "selfish" supernumerary chromosome that destroys the paternal genome in fertilized eggs.

Ronald D. Cave (222). As part of a research team at Zamorano, we are doing considerable work with inventories of parasitic Hymenoptera in agroecosystems and biological control.

Li Chang-fang (223). I work at the Institute of Zoology, Academia Sinica, Beijing. My program deals with classification of some aphelinids and encyrtids reared from *Aonidiella aurantii* (Maskell) and *Chrysomphalus bifasciiculatus* Ferris on citrus. I also study the biology of these parasites. As part of this program I am working in the field and laboratory in Guangzhou until 1990.

Fernando Pendás Martínez (229). I work on the taxonomy and ecology of the family Mymaridae (especially the genus *Anagrus*), and also the family Eulophidae (*Tetrastichus*).

Gabriela Perez-Lachaud (230). After a period of silence, during which time there were a set of changes in status and countries (I went back to Mexico City where I stayed for a year, married a French researcher, and then returned to Paris, where we are going to have a baby!), I return to the world of parasitoids.

I am doing my thesis research on host recognition and host selection by two parasitoids of the bean weevil (*Acanthoscelides obtectus*): *Chryseida bennetti* Burks (Eurytomidae) and *Torymus atheatus* Grissell (Torymidae); I am also interested in learning by insect parasitoids.

At present I also have five species of parasitoids in culture: *Chryseida bennetti* Burks, *Torymus atheatus* Grissell, *Eupelmus cushmani* (Crawford), *Dinarmus laticeps* (Ashmead), and *Stenocorse bruchivora* (Crawford) (Braconidae). It is possible to exchange living or dead material for study or biological control with those who are interested.

K. Surekha (231). I am working on the taxonomy of Eulophidae of Malabar (Kerala, India) for my Ph. D. degree in Calicut University, under the guidance and supervision of Dr. T. C. Narendran.

P. M. Sureshan (232). I am a beginner in the field of taxonomy of Chalcidoidea. I am now working as a Research Fellow in the Department of Zoology, University of Calicut, under the guidance of Dr. T. C. Narendran. My research topic is taxonomic studies on the pteromalid fauna of Kerala. I have been working on the topic for the last two years.

Csaba Thuróczy (233). I work for the Hungarian Natural History Museum at Budapest. I would like to continue the life work of the late Dr. J. Erdos and Dr. G. Szelényi in hymenopterology.

I recently mounted and identified a large amount of material that I collected in Bulgaria from 1984 to 1987. At the same time I am systematizing the Chalcidoidea collection at the Museum, which numbers more than hundreds of thousands of specimens that require identification or revision. Though I am principally interested in the taxonomy and ecology of Pteromalidae, I am responsible for prompt identifications of all chalcidoids reared in Hungarian research institutions.

Xu Zhi-hong (235). I work on chalcidoid wasps on scale insects on citrus, on chalcidoids from seeds of forest trees, and *Trichogramma* spp. associated with *Dendrolimus punctata* Walker.

Victor N. Fursov (236). I study the fauna, taxonomy, morphology, ecology (host-parasite relationships) of the family Trichogrammatidae. This family includes parasites of a great number of agricultural pests. I am also interested in the taxonomy and biology of egg-parasitoids from other families, such as Eulophidae and Mymaridae.

#### FORUM

Anellus, flagellum, etc. [Mohammad Hayat (77)]. This is neither a screech nor a screed, on antennal segments [CHALCID FORUM 8: 8-10; 9: 12-14]. Too many inches of ribbon has already been 'wasted' (we no more spill ink!), but without any positive results. My anellus remains an anellus and Mike Schauff continues to misspell (sic) it as annellus. In spite of Menke's screech, I really abhor the very idea of calling a segment a flagellomere.

It seems that we chalcidologists - a species far superior to other "logists" (sphecologists, proctodologists !!) - are a conservative lot which means we refuse to change and refuse to agree with others in almost everything [Ed. note: hey, we disagree with that], including the spellings of morphological terms. However, we are generous enough not to complain if somebody calls the 'head' a 'head' (but not a 'prosoma'), the 'thorax' a 'mesosoma' (sometimes including the first segment of the abdomen - propodeum), and the 'abdomen' (sometimes including segments I and II, or excluding I) a 'metasoma'. We never complain when the propodeum is included in the 'thorax' or when the petiole is excluded from the gaster. So why all this screech? So far as I understand, each morphological term must convey the same or nearly the same meaning to all. For chalcidoids, a head means the head (we never thought where we should put the 'neck'), a thorax or mesosoma means the thorax plus propodeum, and the gaster includes segments II+ of the abdomen.

Similarly, we recognize only three parts in an antenna (scape/scapus, pedicel/pedicellus, flagellum) and exclude, for no obvious reason, the ever present 'radicle' segment/joint/article! We sometimes also exclude the anelli (anneli, annelli, and what is wrong with, aneli) [Ed. note: I think I'm getting a headache] in counting the number of flagellar segments/joints/articles. One or more of the distal segments of the flagellum may form a more or less compact club/clava. Irrespective of whether the clava is distinct from the preceding segment or not, it seems better to call all the segments (including anelli) beyond pedicel as the flagellar segments, and to note in descriptions (1) the number of segments in the flagellum, (2) the number of segments 'worthy of being called' (I understand this is sometimes difficult) anelli, and (3) the number of segments forming a clava. A simple solution? It may be. But, we are conservative.

Adding fuel to the fire. John Noyes (B.M. Nat. Hist., London) writes that the editors (Gauld, I.D. and B. Bolton) of The Hymenoptera (see BOOK NOTICES/REVIEWS), have "in their wisdom, introduced further controversy into whether we should use thorax or mesosoma in the Chalcidoidea. In some places they have used "alitrunk" (yuk!!) (see Figs. 50, 91, et. seq.). I want to disassociate myself from the use of this term completely. Both myself and ZB (and others involved) objected to the use of this term but were overruled."

Ed. note: it is a sad, sad day when chalcidologists should have to defer

to the likes of ichy. men and ant men. We commiserate in your total humiliation and degradation, but keep heart, someday we will overcome! Someday, SUPERCHALCID will arrive to right all wrongs and restore the British Empire. However, since that day has yet to arrive, the editors of The Hymenoptera should realize that "alitrunk/ alitruncus" was first originated by the great naturalist Pak E. Derm, in his monumental work "Das Elefant". The term alitrunk was used for that part of an elephant between the "trunk/truncus" and the "tail/tailus"; the term should not be confused with "posttrunk/posttruncus", which is that part of the elephant posterior to the "trunk" (i. e., including the "tail"); the "trunk" + "alitrunk" (i. e., excluding the "tail") is, of course, the "mostofelefant". It was necessary to originate these terms because when Pak was studying the elephant an ant came along, and as everyone knows elephants are frightened of ants (or is it mice?). I do not wish to repeat the methods section of Dr. Pak's study, but introducing the ant to the elephant caused the elephant to jump off the edge of a cliff, thereby necessitating terms for the resulting parts. The moral of the story is, that like elephants, chalcidologists should not fall apart at the sight of ant men, but should, rather, STEP ON THEM!

#### TRAVEL REPORTS

M. J. Gijswijt (61). In the last two years my wife Jeanne and I visted Spain, hoping to find some correlation between the chalcidoid fauna of the Canary Islands and that of the Iberian peninsula. Both regions are presumed to have been reasonably unaffected by the ice-ages. Indeed I have a few species of *Pteromalus* which are near to the Maderan/Canarian species *integer*, *speculifer* and *ametrus*. Moreover, I collected a few specimens of *Acanthiophilus walkeri* Woll. (Diptera, Tephrytidae - sorry), a presumed endemic of Tenerife.

The "desert" near Almeria was especially beautiful in the end of April. In the north of Spain we came through a landscape resembling the Causse Larzac (France), but with isolated huge *Juniperus thurifera* trees. All those trees were heavily infested with galls of a (?new) gallmidge. Despite the continuous attacks of hundreds of tabanids we collected more than 1000 specimens (about 80 species).

Despite the thousands of goats, sheep and pyromaniacal peasants there is still landscapes where interesting forms live. For the enthusiastic J. L. Nieves Aldrey, who I met in Madrid, there is a lot of work to do.

Terry D. Miller (125). Recently (end of March) I had the opportunity to go down to California to collect in the Los Padres National Forest. Collecting was definitely very poor due to the lack of rain that winter and summer. I had the unique experience of pan trapping an area in very close proximity to a major gang fight. It was just a little too exciting. [Ed. note: come to Canada, land of peace and harmony!] I also was able to spend a day at the Calif. Academy of Sciences and wish I could have spent more time there.

Last Sptember I spent three weeks collecting in Nevada and Arizona. All I can say is that the microhymenoptera collecting was fantastic. At last count I was up to about 24,000 specimens. Material from this area is available upon request. I am definitely headed back again this year and I hope to do as well.

Mike Schauff (164). During the last week of June, I was fortunate to be able to travel to the Islands of Bermuda at the invitation of the Bermuda Department of Agriculture and Fisheries to participate in a survey of the insects of the island. Dr. Dan Hilburn has been bringing scientists with expertise in all the major groups of insects to the island and the Chalcidoidea was one of the last groups of Hymenoptera that had not been collected extensively. [Ed. note: did you mention our names?]

Bermuda sits about two hours by air (approx. 700 miles) from Washington, southeast into the Atlantic Ocean. It is really a collection of small islands that are about 1+ miles wide at the widest point and about 20 miles from tip to tip. The area is known as the northernmost point where coral will grow and form reefs, and it is a very popular vacation spot for travelers from the Eastern U.S. However, since it does cool off somewhat during the winter [Ed. note: sissy American complaint] the peak season for tourists is the summertime rather than the winter as it is in most of the Caribbean islands. In spite of this cooling off, the weather is always quite warm with winter days in the 60's and 70's (F.), and nights in the 50's. The lowest recorded temperature on the island is 41 degrees. As a result, the vegetation tends toward palm trees, hibiscus, and the sort of things that one expects of southern Florida. The fauna includes lots of lizards, big toads, tons of ants, and no snakes.

While most of the island is covered with houses and various accommodations for the tourists, there remain quite a few small fields, nature preserves, swampy areas, and so forth. These areas were the focus of our collecting efforts. The weather in June is generally hot with temperatures in the mid to upper 80's and the humidity always very high. This is not a place for someone who does not like to sweat! [Ed. note: see previous note] Collecting was generally quite good, and we got chalcidoids at every place we stuck out a net. It became obvious after a day or so that a few things were present in large numbers and a lot of things in smaller numbers. [Ed. note: God he's good!] One species of *Tetrastichus* (or rather *Aprostocetus*) was especially abundant and it would have been quite easy to take several hundred specimens. Although the weather generally cooperated, we were forced from the field by rain on a couple of occasions. Fortunately, the rains come and go quickly and things dry out very fast so that we were not indoors too much. One highlight of the trip was an excursion to Nonsuch Island. Nonsuch only covers about 5 acres, but it is one of the few places where native vegetation has been replanted and the imported plants that cover most of the rest of the islands have been removed. It is set aside as a nature preserve and access to the island is strictly controlled.

A preliminary sorting of the material taken totaled almost 40 genera, representing most of the major chalcidoid families (pteromalids, eulophids, chalcidids, aphelinids, encyrtids, mymarids) and some of the smaller ones (signiphorids, trichos.). A few things still remain to be identified to genus so that may add more to the total. Given only a short time to sweep about, I am sure that this is just a portion of what actually occurs on the islands.

[Ed. note: Jim Wiley (F.S.C.A., Gainesville, Fl.) ran a Malaise trap at his parents place on Eleuthera Island over the last couple of years. The eupelmids Jim sent me were much more diverse than I would have expected; there was one particularly interesting brachypterous species of *Anastatus*, which

most likely is a brachypterous form of the floridian species, *A. floridanus* Roth and Willis. I suspect that the Florida State Collection of Arthropods has a significant collection of Bahamas Hymenoptera.]

#### COLLECTING

Collecting Chalcididae in the tropics and chalcidoid male swarms [Henry A. Hespeneide (81)]. The travel report of Gérard Delvare (CHALCID FORUM 10: 6-7) on collecting in Columbia and Ecuador stimulates the following comments about collecting Chalcididae. Delvare reports particular success in collecting *Spilochalcis* on plants of the genus *Solanum*, among a few others. The reason for this is likely due to the visitation of these plants by the wasps for extrafloral nectar. I have elsewhere described the attractiveness of extrafloral nectaries (EFN's) to chalcidoid Hymenoptera in general (Hespeneide 1979). In one month at a secondary successional plot at the La Selva field station in Costa Rica I collected nearly 100 species of Chalcididae at EFN's of *Solanum* and of several other plants, especially the composites *Mikania quaco* and *Clibadium pittieri*. It is interesting that EFN's in *Solanum* have only recently been noticed by botanists (Anderson & Symon 1985), probably because they are of a type that is inconspicuous morphologically.

The recent paper on male swarms in the Chalcidoidea by Nadel (1987, Pan-Pacific Entomol., 63: 242-246) recalls other collecting experiences. Again in Costa Rica, I have observed swarms of undetermined male eurytomids at various times. Individuals are seen in numbers (10's), usually hovering around the tips or edges of leaves which don't appear to have any intrinsic attractiveness (such as EFN's). In Arizona in May I have seen numbers of male torymids, and such other chalcidoids as the eucharitid genus *Orasema*, around desert willow trees (*Chilopsis linearis*, Bignoniaceae). I have not taken the time to observe any of these situations in detail, and offer the observations to suggest that male swarms might be rather more general than the few published observations would suggest.

- Anderson, G. J. and D. E. Symon. 1985. Extrafloral nectaries in *Solanum*. *Biotropica* 17: 40-45.
- Hespeneide, H. A. 1979. Are there fewer parasitoids in the tropics? *Amer. Natur.* 113: 766-769.
- Hespeneide, H. A. 1985. The visitor fauna of extrafloral nectaries of *Byttneria aculeata* (Sterculiaceae): Relative importance and roles. *Ecol. Entomol.* 10: 191-204.

#### Meetings and Symposia

XVIII International Congress of Entomology [J. Huber (89)]. Both your editors, and Carl Yoshimoto, attended the International Congress of Entomology in Vancouver this July. While there we met many chalcid workers, including the following: Richard Askew, Gennaro Viggiani, Paul Hanson, Jim DiGiulio, Eric Grissell, John LaSalle, Chris Darling, Loni Coote, John Heraty, and Jim

Woolley. Ten of the N. American chalcid taxonomists met informally to discuss production of a multiauthored set of illustrated keys to the Nearctic genera of Chalcidoidea.

Formal presentations on chalcidoid taxonomy were given by Gennaro Viggiani, Eric Grissell, Chris Darling, John Heraty, and Jim Woolley. Many other papers on biological control, etc. treated chalcids for the most part.

I was requested by J. P. Aeschlimann, (Secretary General of the International Organization of Biological Control) and J. Vogele (co-chairman of the "*Trichogramma*, and other egg parasitoids" working group of the IOBC) to obtain names and addresses of people working on egg parasitoids other than *Trichogramma* and to encourage participation of these workers in this Working Group (see announcement below). Anyone working on any aspect of egg parasitoids is invited to send their name and a brief statement of their interests and current projects to myself. I will collate the names and publish the list in a future issue of CHALCID FORUM. The list of egg parasitoid workers will also be available separately for anyone who wants a computer printout of it.

It would also be useful to obtain a comprehensive up-to-date list of egg parasitoids and their hosts. Initially this could be done for all families except Trichogrammatidae, Scelionidae, and Mymaridae. Girault was the only person to have compiled a comprehensive list of host preferences (1907, 1911, 1914, Hosts of insect egg-parasites in North and South America. *Psyche* 14: 27-39; 18: 146-153, Hosts of insect egg parasites in Europe, Asia, Africa and Australasia, with a supplementary American list. *Z. wiss. Insektbiol.* 10: 87-91, 135-139, 175-178, 238-240). Huber (1986, *Entomography* 4: 185-243) updated the list for Mymaridae.

III International Symposium on Trichogramma and Other Egg Parasitoids [J. Huber (89)]. The 3rd International Symposium on *Trichogramma* and Other Egg Parasitoids will be held in San Antonio, Texas, USA, 23-27 September, 1990. Reply forms are available from Dr. S. Bradleigh Vinson, Department of Entomology, Texas A&M University, College Station, TX, USA, 77843-2475.

Topic areas of the symposium will include: biosystematics and genetics; host relations and biology; physiology and behaviour; ecology and population dynamics; rearing, production and release; compatibility; and effectiveness and assessment.

The two previous symposia on egg parasitoids have been almost entirely on *Trichogramma*. There are many other egg parasitoids. Species of Trichogrammatidae, Mymaridae, Scelionidae (not a chalcidoid family, but important nevertheless) are all egg parasitoids. Some members of several other chalcidoid families are also egg parasitoids, e.g. Encyrtidae, Eulophidae, Eupelmidae, Pteromalidae, Tetracampidae, Eurytomidae, Torymidae, and Aphelinidae. These groups often have been neglected because *Trichogramma* seems to have drawn so much money and attention from biocontrol workers. It is time that the non-*Trichogramma* trichogrammatids and the other groups had some good publicity in an egg parasitoid conference, particularly considering that they are often far more abundant than *Trichogramma*. Undoubtedly, these groups play a very important but very underestimated beneficial role in natural control of potential insect pests. So if you can, attend the conference and discuss your NON-*Trichogramma* work.

Udo Sellenschlo (165). During the last Congress of the German Society for General and Applied Entomology (DGaE) in Heidelberg, September 30 to October 4, 1987, a workshop called "parasitoids" was founded on the suggestion of Dr. Abraham (Hamburg). The first official meeting occurred in Bonn, March-11-12, 1988. Thirty-one participants (1 from Switzerland) met at the Department for Applied Zoology, where Dr. Madel had organized the gathering. Members of the workshop gave lectures about their employment; breaks were used for private conversations and for becoming acquainted with each other. One fourth of the participants are working on chalcidoids. In the future a workshop on "useful arthropods" is planned. The next meeting will be in Frankfurt, February 1989; the exact date (a weekend) is not fixed yet. People who are interested in a workshop on "parasitoids" please contact Mr. Stefan Vidal, Zoologisches Institut und Zoologisches Museum, Martin-Luther-King-Platz 3, D-2000 Hamburg 13, West Germany.

Taxonomy and Biology of European Hymenoptera. A course on the taxonomy and biology of European Hymenoptera will be held at Sheffield, England, 3-9 September 1989. The course will include lectures, practicals, and demonstrations of techniques. It is hoped that this course will be linked with a one day symposium on current research on European Hymenoptera.

The course is aimed primarily at PhD students and other workers starting out on the study of Hymenoptera who wish to become more widely acquainted with this diverse and important insect order. The cost of the course, including accommodation and board, will be approximately 150.00; some travel bursaries may be available. For further information, please write: Donald Quicke, Department of Animal Biology, Sheffield University, Sheffield, S10 2TN, England.

#### BOOK NOTICES//REVIEWS

Gauld, I. D. and B. Bolton (eds.) 1988. The Hymenoptera. Oxford University Press, xii + 332 pp., 10 colour plates, 148 figures. Hard cover. £37.50 (£35.00 + £2.50 P&P).

"The Hymenoptera" includes a lengthy introduction with notes on morphology, classification, use in biological control, development of sociality in aculeates, etc.; also included are keys to the superfamilies and families with notes on diagnostic characters for each family, biology and key works to be used for identification. It is based on the British fauna but is of interest for (budding) hymenopterists in other parts of the world. [The section on Chalcidoidea (pp. 146-180) is by yours truly].

John Noyes (139)

Bouček, Z. 1988. Australasian Chalcidoidea (Hymenoptera): a biosystematic revision of genera of fourteen families, with a reclassification of species. C.A.B. International, Wallingford, U.K. 832 pp. Hard cover. £89.95 (U.K.), \$199.95 (Americas), \$99.95 (elsewhere).

"Australasian Chalcidoidea" represents the jewel in the crown of the illustrious career of Dr. Zdenek Bouček. Though the taxonomic limits of the book are primarily restricted to the Australasian region, the work is indispensible for anyone who considers himself a chalcidologist, or who is merely interested in chalcidoids, whether they be from Australia or Greenland.

Eight hundred and thirty-two pages of well presented text, and 1,328 illustrations of exceptionally high quality record the described fauna of 14 chalcidoid families from Australia, New Zealand, New Guinea, and adjacent islands. The 14 families reviewed are Agaonidae, Chalcididae, Eucharitidae, Eulophidae, Eupelmidae, Eurytomidae, Leucospidae, Ormyridae, Perilampidae, Pteromalidae, Rotoitidae, Tanaostigmatidae, Tetracampidae, and Torymidae. A further six families (Aphelinidae, Encyrtidae, Mymaridae, Mymaromatidae, Signiphoridae, and Trichogrammatidae) are included in the key to families but are excluded from the review. In addition to a key to families, for each family there is a key to subfamilies, tribes, and genera, and for each genus a catalogue of the Australasian species. Newly described taxa include 15 subfamilies, 13 tribes, 138 genera, and 190 species; 316 generic names and 210 specific names are placed in synonymy (including some extralimital names), and over 1,050 new combinations are made; replacement names are proposed for 35 species, and 155 lectotypes are designated. Introductory sections to the work include an historical review of research on Australian Chalcidoidea, methods of collecting and mounting specimens, a faunistic analysis, an exceptionally useful summary of descriptive and morphological terms (which hopefully will promote standardization of terms in literature on the Chalcidoidea), and an excellent overview of the diverse biology of chalcidoids. Indexes are provided of plants, of arthropod hosts, and of the chalcidoid taxa.

The wealth of high quality illustrations is one of the joys of this book; I suspect that many readers will enjoy simply thumbing through the book to marvel at the incredible beauty and structural diversity of chalcidoids. Though the illustrations are logically arranged by family and subfamily, it is somewhat unfortunate that they are scattered throughout the text rather than combined in one section. This makes it more difficult to locate quickly a relevant illustration when reading the keys or text. However, it is obvious that much thought was given to the presentation of the keys and text for ease of use, both are highly functional and visually appealing. Within the keys to genera, suprageneric names are in uppercase and generic names are in boldface, which facilitates rapid scanning for particular taxa. Genera are arranged within each family by presumed phylogenetic affinity. Numbering of the genera in both the keys and text makes their location within the text quite easy. The reader will find some typographic errors with careful reading [e.g., Figs. 1017-1019 *nec* "Figs. 1117-1119" for *Xenanastatus* (p. 553); *prepectus* not *swollen* *nec* "*prepectus swollen*" for Eupelmidae (p. 567).], but this is to be expected for such a large work. Because "Australasian Chalcidoidea" is one of the most important works ever produced on the Chalcidoidea, the current printing undoubtedly will sell out very quickly. Hopefully, Dr. Bouček will be allowed to correct any errors in what surely will be subsequent printings.

Gary Gibson (60)

**AUSTRALASIAN CHALCIDOIDEA (HYMENOPTERA)**

**A Biosystematic Revision of Genera of Fourteen Families, with a  
Reclassification of Species**

In the control of pests, increasing attention is now being paid to their natural enemies. Among these enemies are many parasites belonging to a very large group of Hymenoptera parasitica, the superfamily Chalcidoidea. Often referred to as chalcidoid wasps or chalcids, they are usually of minute size but are of great importance in the regulation of populations of pest species. Many have already been used for the successful biological control of various agricultural pest.

This book is a well illustrated modern revision of this enormous group of tiny wasps. Although focussed on Australasia, it is the most important original systematic work for more than 80 years and will have great impact on studies throughout the world. Fourteen families are reviewed with brief surveys of the biology, morphology and distribution of the group and a key to all chalcidoid families. It includes keys to 550 genera and their characteristics as well as an annotated catalogue of almost 2400 species of the region. Under each taxon the biological aspects are summarized, particularly the known hosts and their distribution. The book will be invaluable to specialists and extremely useful to all other entomologists, especially because of the many detailed illustrations and the wealth of biological records that it contains.

(1988)                      832 pages                      ISBN 0-85198-607-2

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Rasplus, J-Y. 1988. La communauté parasitaire des Coléoptères séminivores de Légumineuses dans une mosaïque forêt-savane en Afrique de l'Ouest (Lampto-Cote d'Ivoire). [The parasitic community of seed-feeding Coleoptera of Leguminosae in a forest-savanna mozaic in West Africa (Lampto-Ivory Coast)]. Doctoral Thesis, Université d'Orsay-Paris XI. 437 pp.

Dr. Rasplus' thesis is divided into two parts - "Ecology and Biology" with five chapters, and "Systematics" with four chapters. Chapter one of the first part sets the framework for the study (geography, local climate and vegetation) and the methods used for collecting and rearing the beetles and their parasites and determining parasitism rates. Chapters 2-5 contain discussions of, respectively, (2) the leguminous species of Lampto and the species attacked by beetles, (3) the seed-feeding beetle and Hymenoptera (Eurytomidae) populations, (4) the parasitic Hymenoptera, and (5) an analysis of the parasitic community. The second part is written as a compilation of four articles (chapters) ready for submission as taxonomic publications: (1) the Afrotropical species of *Dinarmus*, (2) new Afrotropical species of *Entedon*, (3) new species of Afrotropical Eurytomidae, (4) new species of Afrotropical Chalcidoidea. A preliminary key is also given to the genera of parasitic Hymenoptera (Chalcidoidea and Ichneumonoidea) associated with seed-feeding beetles in West Africa.

Over 7000 beetle parasites were reared, curated, and identified. New information is presented on the biology of 42 chalcidoid species, including 3 phytophagous euytomids. Twenty-eight new species of chalcidoids are described, representing 65% of the chalcidoid community studied.

This work should be a valuable guide and stimulus for future studies on host-phytophage-parasite relationships in temperate or tropical regions. The high proportion of new species indicates how poorly known are the parasitic insects of Africa. The author points out clearly (p. 218) that ecological research of the type undertaken cannot be rigorous without a sound systematic base which allows the identity of species present to be precisely known. He further states that at present there is a lack of taxonomic specialists due to the politics of research which has led over many years to a neglect of the importance of taxonomy and the training of taxonomists.

I congratulate the author for a fine piece of work that brings together in one project excellent ecological and biological study supported by sound taxonomic work. It is indeed rare for an entomologist to do both so well.

I do have three criticisms about the taxonomic part of the thesis: (1) in the titles of the taxonomic papers, and even in the text of those papers, no specific mention is made of the family name of the genera under study (one hopes that this will be included in the publication titles); (2) the author refers to a new species name in *Uscana* (Trichogrammatidae) proposed by Viggiani, in press (this may inadvertently create a *nomen nudum* if publication of Viggiani's paper is for some reason delayed); (3) although the author states that he will be publishing his generic revisions in order to validate status of his new species, this statement only appears in the introduction of part two of the thesis, where it can easily be missed.

I look forward to rapid publication of the different thesis chapters, both to validate the taxonomic names and to inform the entomological community of the interesting results obtained in the study of seed-feeding beetles and their parasites in West Africa.

John Huber (89)

HELP!

If anyone is working on, or knows of rearing techniques and biological requirements of *Prospaltella berlesei* (Aphelinidae), could they contact Dr. Gizella Ordogh, University of Horticulture, Department of Entomology, Ménesi ut 44, Budapest XI, Hungary 1118. She is trying to rear these for release to control the spreading of white peach scale (*Pseudaulacaspis pentagona*) in Hungary.

DETERMINED CHALCIDOIDS WANTED: We are trying to improve our Hymenoptera holdings and have very few chalcidoids. We would be glad to accept gifts of any determined species for our Museum collection. Let us know if there are other groups we could offer in trade (we will also accept other groups). William H. Clark (29), Museum of Natural History, College of Idaho, Caldwell, Idaho 83605, USA.

ETCETERA

NOTES FROM UNDERGROUND - a new myrmecological newsletter. During last December's Entomological Society of America meeting in Boston there was an extraordinary gathering of myrmecologists. As part of a memorable workshop on the identification of Neotropical ants, a group discussion was held on a number of issues important to the field of myrmecology as a whole. The concensus of the participants was that, for students of social insects, there was a sad deficiency in communication mechanisms, particularly between systematists and ecologists. The suggestion was made that a newsletter would be of great benefit in providing a forum to improve exchange of information. The newsletter will be called *Notes from Underground*. Each number will contain a series of "bulletin boards" listing systematists and the groups they work on, current projects, requests, etc.; articles contributed by members; a guest column by some eminent myrmecologist; letters commenting on the above.

To join *Notes from Underground*, contact the editors (Mark W. Moffett, Stefan Cover, Norman Carlin), MCZ Laboratories, Harvard University, Cambridge MA, 02138 USA.

LOMAS de BARBUDAL - a NEW biological reserve in southern Guanacaste Province of Costa Rica. A considerable amount of land (about 20%) has been conserved in Costa Rica, most in moist or wet forest lowland or higher elevations. Very little of the conserved land is dry forest, one of the rarest and most threatend environments in Costa Rica and elsewhere in middle America. LOMAS de BARBUDAL Biological Reserve, the most recent addition to the Costa Rican National Park System, represents some 6,000 acres of largely intact lowland dry deciduous forest. Its Spanish name aptly describes the Reserve's general appearance and setting as "bearded hills". Within its relatively small area it sustains seven distinct habitat types. The Reserve harbors the only conserved river valley habitat in southern Guanacaste. The riverine water and numerous widely scattered perennial springs sustain important habitats and microhabitats for a variety of plant, vertebrate and invertebrate species. A survey (April 1987) by forest geneticists from the Centro Agronomico Tropical

de Investigacion Enseñanza (CATIE) revealed that throughout the Reserve there are numerous excellent examples of dry forest tree species with superior genotypes, establishing Lomas as an important reservoir for timber tree seed resources, which will prove valuable for future reforestation in Costa Rica. Overall, about 170 tree and treelet species have been recorded from the Reserve. Lomas also supports a myriad of insects and insect relatives, among which the Hymenoptera play a major role in the ecological functioning of the Reserve. Early surveys of the Reserve indicate that there is an especially rich assortment of bees (about 250 species) and associated nesting microhabitats, a finding which inspired the Reserve. Bees are the most important pollinator group for about half of the flowering plants at Lomas and in all of Guanacaste.

For LOMAS de BARBUDAL to remain viable, it is imperative that the Reserve receive increased protection. The Parks Service of Costa Rica, however dedicated, is already greatly extended on its limited budget to assure adequate protection for the new LOMAS de BARBUDAL RESERVE and other parks as well. Therefore, Lomas must look after itself; it must become self-supporting. To realize this goal, professional biologists, biology students, naturalists, bird watchers, photographers, wildlife artists, and others who appreciate tropical wildlife are encouraged to visit and use the Reserve to help generate resources to meet this goal. Various organizations, such as "Friends of Lomas Barbudal", "The Xerces Society", "Centro Ecologico la Pacifica", and the "World Wildlife Fund" have pledged their support. You too can help, please send your tax-deductible donation to: FRIENDS OF LOMAS BARBUDAL Inc., 691 Colusa Avenue, Berkeley, CA 94707, USA.

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(Changes and additions to March 1988)

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