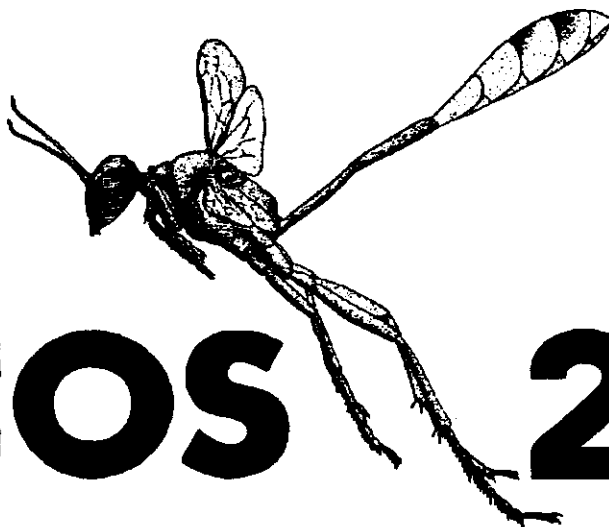


DECEMBER 1991

SPHECOS 22

A FORUM FOR ACULEATE WASP RESEARCHERS



THOUGHTS FROM THE MUD D'AUB

This issue follows the last one later than I would like, but not that much material has come in, and both Terry and I have been pretty busy with other things. I hope that the lack of much input from the readership is just a quirk of 1991, and not an indication that interest in *Sphecos* is waning!

1991 has been a remarkable year in world history, and the changes in Europe are ongoing as we go to press. We have attempted to update our mailing addresses to reflect the changes in the various former Soviet Republics.

The *Journal of Hymenoptera Research* is a reality and issue one will be packed with interesting papers. Those of you who are not members of the society should join. You will miss out on a fine journal if you don't. Full details on how to join will be found in the announcement on pages 19-21 of *Sphecos*.



RESEARCH NEWS/HELP NEEDED

Sérvio Túlio Pires Amarante (Museu De Zoologia Da Universidade De São Paulo, Caixa Postal 7172, 01064 - São Paulo, Brazil) writes: "I have recently finished my M.S. work and I am beginning to work on my Ph.D thesis project. I decided to revise *Penepodium*

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(and *Dynatus*), so I can make a study that may solve many problems, involving the taxonomy, biogeography and phylogenetics of all (?) species in a period of no more than four years. I am intending to work here for some months, to become acquainted with the species characters and the generic problems, and then I would like to go to the Smithsonian Institution for three or four months.

"I have just identified a new species of *Pisoxylon* and I am intending to describe it. This species is strikingly different from *P. xanthosoma* and shows some characters that may lead to a redefinition of the genus."

Sérvio would appreciate any information or loan of material in the genera *Penepodium* or *Dynatus*.

Øistein Berg (Bastadveien 73, N-1370 Asker, Norway) writes: "I am only an amateur who has collected Aculeates for only three years. I have not yet specialized in any particular field, but I do have a weakness for the Eumenidae (and the bee-family Megachilidae). I am mostly interested in the faunistics of the Norwegian species. However, I also collect when travelling abroad. Last winter I collected 230 aculeates (including 34 Sphecidae) in South-East Asia (chiefly Malaysia). My

main problem is to have identified what I collect, both here and abroad. Would anyone be willing to identify specimens for me?

Eduardas Budrys (Entomology Laboratory, Inst. Ecology, Akademijos 2, Vilnius 232600, Lithuania) says: "Last year (1990) studies on systematics (as well as many other areas of fundamental science) were not financed enough because of the hard economic situation in Lithuania. As a result, I had to interrupt my taxonomic work on palearctic Pemphredoninae and to do work very different from my own (e.g. ecological analysis of agricultural territories being improved). Fortunately, this year the situation is going to be normal; the governmental financial support of fundamental sciences is resumed. Consequently, I am continuing my revision of palearctic *Diodontus*.

Jim Carpenter (Museum Of Comparative Zoology, The Agassiz Museum, Harvard University, Cambridge, Massachusetts 02138) writes: "When I move to the American Museum (of Natural History, New York, in early 1992), I'll have the services of Ward Wheeler's molecular lab available. They report success in amplifying DNA sequences from samples of the Epiponini collected into ethanol during my last foray into Amazonia. Success thus seeming assured, we'll write a collaborative grant to fund a technician when I get to New York. I have specimens of all but three polistine genera in ethanol, and the technician will work up a DNA data set to add to those being assembled by Wenzel, Kojima and I. Which brings me to the request. We'll be looking for further col-

laborative projects, and one that comes to mind is vespine species. Based on the survey of male genitalia when I did my 1987 paper, I have no doubt that this character source is an excellent one for species level phylogeny. It would be interesting to do a congruence study using both morphological and molecular data on this group. So I would like to begin accumulating specimens of vespine species, preserved in ethanol. I have a few species, but would like to get as complete a sample as possible. It probably won't require very many specimens, 6-12 or so. So anyone working on social wasps, please keep this in mind as you collect, and let me know anyone you think I should contact.

The following remarks by Aleksandar Cetkovic (Institut za Zoologiju, Biološki Fakultet - PMF, Studentski trg 16, 11000 Beograd, Yugoslavia) are excerpted by Chris Starr with permission from letters to Chris and to Josef Gusenleitner:

"My main interest for the past five years has been the Mutillidae of Africa. Recently I have also been working on the Vespidae (s.str.) of Yugoslavia, and I hope during 1991 to complete a volume on the subject for the forthcoming **Fauna of Yugoslavia** (if such a country still exists). At present I am finishing my MSc thesis on the biogeographic affinities of these wasps.

"Through this study I have familiarized myself with the *Polistes* of Europe and have become aware of some problems in their current classification. This of course imposes limitations on what can be done in a faunistic study of Yugoslavia alone. Especially problematic is the *P. foederatus*-complex (= *P. gallicus* sensu Day and Gusenleitner), which is in need of fundamental revision. I have made a preliminary study of the group, but I still need to see more material from the area between France and the Caucasus, as well as the relevant types.

"[Chris's] last letter arrived one day before The Greatest Events in Belgrade/Serbia in the Last Four Decades. The situation was not so dramatic as might be assumed from foreign press reports, but the magnitude of changes is beyond immediate understanding. Even ten letters would not suffice to describe what is going on, so I will just emphasize the main overall effect on Yugoslavian science: The extraordinary psycho-

logical impact of political events has disabled most of us from regular work for almost a month."

Chris comments: "Alex is certainly right about the confused taxonomic state of the European *Polistes*, at least in the south and east, including the area around Yugoslavia. A recent exchange of letters among the two of us, Regine Eck and Josef Gusenleitner shows that in these areas the literature is quite inadequate. And while my unpublished key to the group (mentioned in *Sphecos* 20:3) seems to be an improvement over what was previously available, it leaves the real problem untouched. I look forward to seeing what Alex can make of it during lulls in the revolution."

Jorge F. Genise (Museo Argentino de Ciencias Naturales, Av. Angel Galardo 470, Casilla Correo 220, Sucursal 5, 1405 Buenos Aires, Argentina) reports that his papers on *Tiphia* and *Scolia* are in press and two on Thynnidae with Lynn Kimsey are in preparation.

Arkady Lelej (Institute of Biology and Pedology, Vladivostok-22, 690022, USSR) reports: "The first part of the fourth volume of the **Key to the Insects of the Soviet Far East** has finally been completed. I hope that the book will be published in 1992-1993 by the publishing house "Nauka" (Leningrad). MS includes the following families of wasps:

Dryinidae	19 genera	47 species
Embolemidae	2 "	3 "
Bethylidae	13 "	16 "
Sapygidae	2 "	3 "
Scoliidae	2 "	7 "
Tiphiidae	4 "	14 "
Mutillidae	8 "	16 "
Pompilidae	23 "	96 "
Vespidae	25 "	113 "
Sphecidae	61 "	336 "

"The family Chrysididae will be prepared by N. Kurzenko for the next issue of the fourth volume".

Marlo Sergio Palma (Lab. Biol. Molecular, Dept. Biology, IBRC, UNESP, Av. 24-A no. 1515, Rio Claro, SP, 13.500 Brazil) reports: "The Department of Biology, IBRC, UNESP, Rio Claro, SP, Brazil, created a research group and a laboratory devoted to molecular biology and the biology of insects. The laboratory is actively involved in the following research:

- Investigation of the composition and mechanisms of action of the components of venom from neotropical social wasps. The main interest is the use of venom as part of defense strategies.

- The molecular basis of alarm communication by pheromones in social wasps: models for pheromone receptors.

We would like to interact with other researchers interested in these wasp venom applications.

Michael Prentice (Dept. of Entomology, 218 Wellman Hall, Univ. of California, Berkeley, CA 94720) writes: "I will be finishing up my classes and qualifying exam this semester and should be working full time on my thesis on sphecid relationships by the end of November. The more I have learned about sphecids, the more I think I could not have picked a more interesting group. The relict taxa that span the gaps between the subfamilies are particularly interesting and should help fill in many of the details of sphecid evolution.

"I will be doing both cladistic and phenetic analyses at the tribal level but may work at the generic level when considering certain paraphyletic tribes, such as the Dolichurini, Miscophini, Crabronini, etc. In the phenetic study I intend to include multivariate analyses of such features as wing venation, thoracic shape, etc. using quantitative characters. So far I have completed a very preliminary analysis of this sort on sphecid wing venation with very interesting and encouraging results. In this very preliminary analysis, where I examined only certain taxa with complete venation, the subfamilies clustered very well, with little or no overlap between many clusters. Potentially, this will provide a more objective measure of similarities between taxa for various morphological features and may suggest interesting relationships. In the cladistic analysis I will be including DNA sequence data if I can get the amplification and sequencing reactions to work out and if I can find sequences with phylogenetically informative characters at the level I am looking at.

"One of the more difficult aspects of the thesis will be in obtaining specimens of many of the interesting, but uncommon taxa. The most important of these include Dolichurini, *Stangeella*, *Laphyragopus*, *Palarus*, *Auchenophorus*, Scaphuettini, *Dinetus*, Bothynostethini,

Heliocausus, *Mellinus*, *Entomosericus*, *Odontosphex*, *Pseudoscolia* and *Eremiasphex* among others. My intention is to examine internal cuticular structure and thus specimens would not be returnable (unless dissected specimens would be desired). I am also interested in any sphecids taxa preserved in alcohol since specimens stored in alcohol (preferably 95%) are much better for DNA work and for examining soft internal structure."

Jan Willem van Zuijlen (Nationaal Natuurhistorisch Museum, Postbus 9517, 2300 RA Leiden, The Netherlands) is working hard on a cladistic study of the genera of the Sphecidae. He is coordinating his efforts with Byron Alexander and Michael Prentice.

Franco Strumia (Università di Pisa, Dipartimento di Fisica, Piazza Tomcelli, 2, 56100 Pisa, Italy) reports: "I am arranging a complete bibliography on Chrysididae, by using a Macintosh computer and a standard database (File-Maker). Up to now the file contains about 1300 records. My plan is to include all the pertinent data in order to sort out instantly information, like all the papers dealing on a given species or geographical region, synonymy, biology, etc. Therefore I need to have a copy of all papers/books in the file. This is more difficult in entomology than in physics, because of the larger number of journals and the difficulty of contacting people. In particular I found it difficult to contact the Japanese. It should be helpful if I could have the address of authors like Y. Yamada, H. Okuna, and H. Kaji."

Bram Willink (Instituto Miguel Lillo, Miguel Lillo 205, 4000 S. M. de Tucuman Argentina) spent over two months at the U.S. National Museum of Natural History studying *Pachodynerus* and *Hypodynerus* in preparation for revisions of both genera of Vespidae. Bram made the visit thanks to a Smithsonian Short Term Visitor grant. He says *Pachodynerus* has about 30 species, perhaps 10 of which are undescribed. Bram says *Hypodynerus* has about 60 species. He hopes to complete his revision of *Pachodynerus* in 1992. After leaving Washington Bram went to the Museum of Comparative Zoology for a few weeks, then on to California. He visited the University of Cali-

fornia at Davis and also the California Academy of Sciences in San Francisco before returning to Argentina in September.

Arnold Menke has finished his revision of the New World species of *Larra*. Eight species are recognized including one new one. They are segregated into three species groups. Arnold's next research project will be the completion, at long last, of his revision of the New World species of *Ammophila*. Many have said it would never happen! Eventually he will be requesting loans of material, but currently Arnold has enough *Ammophila* on hand to keep him busy for quite a while.



MISSING PERSONS

Claudio Delaco of Brixen, Italy
Gary French of Gainesville, Florida.
Dr. Eberhard Holtappels of Heinesberg, West Germany.
Juan M. Labougle of Lawrence, Kansas.
Dr. Nikolaus Mohr of Bergisch Gladbach, West Germany.
Dr. Friedrich Schremmer of Vienna, Austria.
Jeanne Sullivan of Alexandria, Virginia.



NEW ADDRESSES

Yvan Barbier: Laboratoire de Zoologie, Université de Mons-Hainaut, 19, Avenue Maistriau, B-7000 Mons, Belgium.
Øistein Berg: Båstadveien 73, N-1270 Asker, Norway.
Johan Billen: Zoological Institute K.U. Leuven, Naamsestraat, 59, 3000 Leuven, Belgium.
James M. Carpenter: Dept. of Entomology, American Museum of Natural History, Central Park West at 79th Street, N.Y., N.Y. 10024. (Jan. 1992)
Chen Naizhong: Plant Quarantine Institute, Ministry of Agriculture, Liangmaqiao, Beijing 100026, China.
Mike Crosland: Dept. of Entomology,

Univ. of California, Davis, CA 95616.
Mick Day: 118, Whitmore Road, HARROW, Middlesex, HA1 4AQ England
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Diomedes Quintero Arias: STRI, Tupper Building, Unit 0948, APO AA 34002-0948, Miami, Florida.
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Pier Luigi Scaramozzino: Museo Regionale di Scienze Naturali, Via Giolitti, 36, I-10123 Torino, Italy.
Margery G. Spofford: Neurobiology and Behavior, 1134 Comstock Hall, Ithaca, New York 14853.
Chris Starr: Dept of Zoology, Univ. of the West Indies, St. Augustine, Trinidad.
Mamoru Terayama: Biological Laboratory, Toho Institute of Education, 1-41-1 Wakaba-cho, Chofu, Tokyo, 182 Japan.
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Paul Westrich: Brueckenstr. 2, D-7400 Tuebingen, Germany.

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Frank Parker, Costa Rica: 506 69 10 43

Chris Starr, Trinidad: (809) 663-9684.

Kees van Achterberg, Holland: (071) 133344

E-MAIL (BITNET) NUMBERS

Mary Lacey, USDA, Systematic Entomology Laboratory, Beltsville, Maryland: MLACEY@NMDARS.

Bob Jeanne (Dept. of Entomology, Univ. of Wisconsin-Madison, Madison, WI 53706) writes, "Possibly because I was the only one listed in your embryonic e-mail directory, I received a request from **Vera Machado** at the Instituto de Biociencias, Rio Claro, UNESP, Rio Claro, SP, Brazil that their Center of Social Insect Study (CEIS) be listed. The Bitnet address is: UERCB@BRFAPESP. This number will reach not only her, but all the other researchers on the staff of the center. These include **Vera Machado** and **Vilma Maule-Rodrigues** (biology of social wasps), **Nivar Gobbi** (ecology), **Dercio Simões** (ecology), **Sulene N. Shima** (polymorphism), **Edilberto Gianotti** (biology), **Marlo Sergio Palma** (venoms), **Harold Fowler** (ecology), **Flavio H. Caetano** (anatomy), **Marla José Hebling** (physiology). Students working on wasps at the Center include **Glaucia Marlo Tech** (auditory cues), **Fatima Palma** (stings), **Orlando Silvelra** (sting glands), and others.



PEOPLE IN THE NEWS

Martin Cooper ("Hilcrest", Ware Lane, Lyme Regis, Dorset DT7 3EL, United Kingdom) reports that the collection of insects that he made in South America earlier this year was finally returned to him. It had been seized by the customs people at Quito, Ecuador.

Mick Day left the employ of the Natural History Museum (BM(NH)) at the end of May, 1991. He has officially accepted early retirement on voluntary redundancy terms as part of the process in which the Museum has shed 100 posts in order to trim the salary component of the yearly budget. However, the voluntary aspect of the process is restricted to the choice offered by the Museum when it identified Aculeate Hymenoptera as an area within which there would be no future work requirement! Mick hopes to be able to continue as an amateur student Aculeata, as are so many readers of these pages. Any outstanding official correspondence regarding, for example, outstanding loans, should be addressed:

c/o Mr. Tom Huddleston
Dept. of Entomology
Natural History Museum
Cromwell Road
London SW7 5BD UK

Mick's home address is:

118, Whitmore Road,
HARROW,
Middlesex,
HA1 4AQ
Telephone 081-422-9668

Mick hopes to work largely at home when suitable facilities are installed, with occasional forays to the museum for material and library facilities. Any colleagues who have enquiries of the kind which they may have taxed him with whilst he was a member of the museum staff can within reason continue to do so for the time being where simple consultation of material or references is concerned. He will contact all institutions from which he has outstanding loans, indicating whether he is returning the material forthwith, or in some cases soliciting an extension of the loan within his new circumstances.

Robin Edwards (5 St. Edwards Close, East Grinstead, West Sussex RH19 1JP England) writes: "I will reach the grand old age of 60 on September 7 [1991], and on that day my employer will deem that I am no longer suitable for permanent employment. Strange thing this fixed-age retirement! I aim to do some consultancy work for a few years after that magic date - identifying insects and doing some computer work.

Unfortunately I will be unable to search for references to the Vespinae, and my regular up-dates in *Sphecos* will cease. Then I too will have to rely on Arnold and Terry. From September, please address all correspondence to my home, 5 St. Edwards Close, East Grinstead, West Sussex RH19 1JP England."

Fernando Fernández C. (Apartado Aéreo 77038, Santa Fé de Bogotá 2 D.C., Colombia) writes: "Me place comunicarle que ahora estoy como curador de Hymenoptera en el Museo de Historia Natural de la Universidad Nacional lo cual me facilita el trabajo de ordenación de este orden y sobretodo de envío a especialistas. Igualmente, participo en un programa (en sección Hymenoptera) sobre Fauna de Risaralda de la Universidad. Risaralda comprende una región interesante, incluyendo parte de los Andes Centrales y la transición con el Chocó. Espero coleccionar buen material de Hymenoptera, incluyendo Sphecidae."

Raymond V. Hensen (Vultostraat 147, 3523 TW Utrecht, Holland) writes: "Jack van der Vecht is still alive, but completely senile. He can't recognize anybody, even close friends. I haven't seen him for years, as there is no point in visiting him in this condition. Tragic.

"My own condition is definitely better though not from the entomological point of view. I have decided to quit biology. Over the last few years it has become evident that there is no decent employment to be found in that field nowadays. Like many biologists, and other disappointed scientists I am working in automation now. My entomological activities have come to a complete stop for an indefinite period of time, which means they will probably never be resumed. Apart from my work on *Liris*, all serious projects have been finished. All loans have been returned. My collection (10,000 sphecsids from all over the world) has been transferred to the Leydon Museum where, I hope, Cees van Achterberg will take care that they will be neatly incorporated in the main collection. So long, folks."

A recent note in *Ent. News*, April 19, 1991 (Dept. of Entomology Newsletter, Smithsonian Institution):

Al Norrbom recently provided current information on **Fritz Plaumann**, an individual whose name is familiar to dec-

ades of systematics workers. Gary Steck met Dr. Plaumann last year, and this stimulated Dr. Norrbom to write him, relative to Diptera business. There is now a special museum built in Nova Teutonia (Brazil) to house the Plaumann Collection, and in the close of a recent letter, Dr. Plaumann states "I am near the 89 years of age; the last year 04 September [1990] the President of Germany Mr. von Weizsacker, conferred a order to assist in for me the highest distinction the "Grand-Cros of Meritum", because of my scientific work in entomology."

Roy Snelling (Dept. of Entomology, Natural History Museum of Los Angeles Co., 900 Exposition Blvd., Los Angeles CA 90007) reports: "Contrary to some rumors, I did not remain in a demised state when my heart ceased to function on 2 June 1990. Although CPR failed to revive me, a persistent doctor with a set of electric paddies got me jump-started on the magical third try. Maybe she should have left well enough alone - anybody dumb enough to come back to this world has likely suffered oxygen-deprived brain damage. My so-called "near death experience" was a crashing bore. There was a brief period of extreme vertigo, then nothing. Nada. Zilch. No tunnel, no lights, no singing. I think all those jok-ers who claim such things are having us on. One moment I was awake with

one doctor on either side, in lotsa pain, a long "blink", and when I open my eyes I'm surrounded by doctors and gadgets up the u-no-wat. Amazing.

"Well, a bunch of discomfort, a little zipper-job on my thorax and I'm better than before, so they tell me. We'll see how long this triple by-pass works. Six weeks after surgery, I was back on the beach playing volley ball. Enough of that."

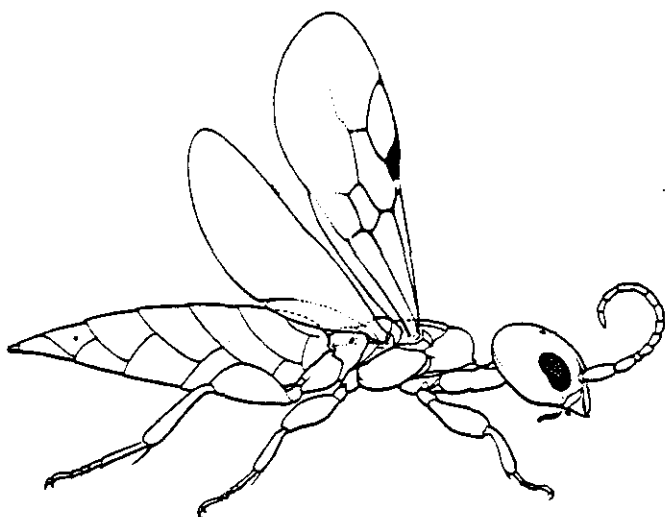


SPHECOS ERRATA

In Alex Rasnitsyn's note "Paleoentomology in Moscow" (*Sphecoc* 21:7), the president of Kuperwood Enterprises should read **Eric Kuperman**.

Also, the page numbers for Carpenter & Rasnitsyn 1990, Mesozoic Vespidae, *Psyche* 97, should read 1-20 (*Sphecoc* 21:21).

In *Sphecoc* 20:39, the title of a paper by Jean Leclercq (1989) should read: En vue d'une monographie du genre *Lindenius* Lapeletier & Brullé (Hymenoptera Sphecidae Crabroninae). *Bull. Soc. Roy. Sci. Liège* 58:419-444.



Ycalpoca evansi Nagy (Scolebythidae), a parasite of Cerambycidae in southern Africa and Australia.

FORUM

Typified Names of Higher Taxa Once Again

by

Alex Rasnitsyn

(Paleontological Institute, USSR Acad. Sci., USSR 117868-7 Moscow)

I agree with Peter F. Yeo (*Sphecoc* 20:5) that the typified names of higher taxa are troublesome to introduce in routine usage and that they are "fairly difficult for students of taxonomy but it must be a good deal worse for non-taxonomists and laymen, who will probably fail to grasp the system". I am afraid, however, that centuries ago it was even more difficult to teach students and laymen that the earth is not flat and resting on whales' backs, but is instead spherical and hanging in empty space without any support. And they had to learn that the immediate advantages of a simple concept ultimately turn into disadvantages when compared to the more correct idea, even if it is harder to grasp.

I am very certain that it is necessary to typify names of all taxonomic categories because the problem is not just a nomenclatural one. Contrary to the claim that "The Code refrains from infringing upon taxonomic judgement, which must not be subject to regulation or restraint" (ICZN: xiii), principles are compatible only with particular taxonomic concepts, and the type principle is among them. As a result, if we accept the principles we should abandon some particular versions of taxonomy. Similarly, when following one of the respective taxonomic concepts, we have to abandon the type principle. I have examined the subject in wider context in a manuscript available from the Editor.

The principle of type means that "The name-bearing type provides the objective standard of reference by which the application of the name it bears is determined, no matter how the boundaries of the taxon may change" (ICZN #61a). In practice we apply taxonomic names to specimens identified through the use of the taxon diagnosis (a set of characters delimiting the taxon) rather than by direct comparison with the type. There is no contradiction, however, as a diagnosis must always be constructed and, if necessary, modified to cover the characters of the type, and in case of uncer-

tainty the comparison to the type is *ultima ratio* is resolving problems in applying the name.

The type is merely a site to which the name is pinned like a tag. The establishment and use of a type is a rather specific procedure which should have a distinct area of correct application. I argue that the typified taxon name is most compatible with the taxon-continuum as defined by Ponomarenko & Rasnitsyn (1971): a continuous chain (or net) of subtaxa where neighboring subtaxa are more similar to each other than to any member of another continuum. A continuum is like a cloud which can change its volume (its array of component subtaxa) and characters (the place and configuration of the taxon in the space of characters); it can be born, split and dissolve (become extinct). The long history of taxonomy has shown that the typified name is the best solution to the problem of how to give name to such a cloud in the most stable and unambiguous way.

A continuum is a constituent taxon of the phenetic and, when modified into a monophyletic continuum, of the traditional ("evolutionary") system. Monophyly is taken here in its primary, wider sense, covering both monophyly (holophyly) and paraphyly of cladistic usage. It is used to phylogenetically test the phenetically constructed continuum, the procedure being described in detail in the mentioned manuscript.

Non-typified names have other meanings and areas of application. The simplest case is just a name of an idea, such as morphological terms, and it shares all the respective advantages and disadvantages. Such a name must not be misleading: it should be accurately descriptive or otherwise meaningful in one way or another, a rule hardly observed in the existent names of many higher taxa. What is more important, it does not seem possible to establish any hard rules regulating the creation and application of such names: you can remember the case of abdomen/gaster/metasome, and this is quite a typical situation. The current usage of names of higher categories is similar to the above case, and many of use are aware of nomenclatural confusion existing above the superfamily level. There is an ever worsening effect of using non-typified names which I will go into later.

Non-typified names are also compatible with the concept of the taxon-

individual, proposed and defended by Ghiselin (1974-1987). The individual can be identified by direct indication of its name (this is John, that is Mary, or: this is *Homo sapiens*, and that is *Pan satyrus*). The individual can be born and can die, but cannot be divided into parts each able to pretend to inherit the name. Also, an individual can have parts and not have members (specimens, examples). Initially, it was the species which has been claimed to be individual, because the gene flow maintains its integrity. This explanation cannot be unquestionably applied to the species, much less to higher categories. To cover all taxa, another approach has been developed. It has been proposed that the holophyletic taxon (=monophyletic in the cladistical usage, i.e. a taxon which includes an ancestor together with all its descendants) is an integral entity due to lines of descent connecting its constituent subtaxa. I am afraid that the proposal is not correct, however, because any section of the line of descent is equivalent as a joining factor, and no one of them could be preferred to another to be broken while delimiting taxa.

Indeed, follow me for a moment in that the ancestral species of the sawfly family Xyelidae has been a direct descendent of a species belonging or closely related to *Permonka* (the only Mesozoic genus of the otherwise Paleozoic order Palaeomanteida). Further, let you believe that another xyelid species has given rise to the first species of *Undatoma* or another but closely related stem genus of Xyelotomidae, the oldest and probably ancestral family of the tenthredinoid sawflies. I claim that not a single section of the descent line connecting *Permonka* and *Undatoma* is cladistically more weak than another: the *Permonka* species ancestral to Xyelidae has been equally related to both the first xyelid species and its own ancestral species within *Permonka*. Similarly, the first *Undatoma* or another ancestral xyelotomid species) has been equally closely related to its xyelid ancestor and to its xyelotomid descendant. As a result, until we abandon the approach we have no legitimate reason to break any particular line of descent to delimit a taxon, unless we break all of them. Therefore only the living world as a whole can be considered the taxon-individual (providing that life is monophyletic).

The next area where the not typified taxon name can be legitimately applied is the case of the system with taxa defined by their characters (providing the latter do define and not merely diagnose taxon). However, "the character does not constitute genus, but the genus the character" (Linne, 1751, #169), and this is quite true concerning the higher taxa, whose diagnoses are especially difficult to compile in a way excluding exceptions.

It is also possible to introduce cladistic taxa into the system without referring to the type. Their place at the cladogram could be pointed out instead. You could claim, for instance, that *Apiidae s.l.* is a taxon forming a sister group of *Larridae sensu* Lomholt and together with the latter being a sister taxon of *Sphacidae sensu* Lomholt. Though logic of the approach directly implies this way of constructing the cladistic system, cladists do not reject the type principle, despite it being profoundly connected to the similarity based notion of continuum. This is probably because the cladogram is generally evaluated as not reliable enough to serve as the only base in constructing a system and applying taxonomic names.

You can agree or disagree to the the above considerations. You will probably agree, however, that in the above respects, as well as in any other, higher taxa do not differ from the lower ones in possessing features which make them more fit to apply non-typified names. In other words, the higher taxa have no reason to be treated nomenclaturally in any other way than the lower ones, except the necessity to learn some volume of novelties. However tempting might seem the latter reason for the moment, the price of saving the learning time and efforts will be high in the long run. While saving a little in this way, we risk losing our feeling of higher taxa as full and equal members of the system, subjects deserving the same consideration that lower taxa enjoy. Running this way long enough, we are at risk of disregarding higher level taxonomy and phylogeny, or at least of uncoupling them from lower taxa. In my opinion the price will be too high to persist in refusing to extend the Code provisions to all taxa.

Comments by Steyskal (*Sphecos* 20:5) are partly easier to accept. I do follow Rohdendorf's proposal concerning the endings of the names of higher

taxa, though I don't consider myself their ardent defender, much less their defender against Dr. Steyskal. I can only remind that the ordinal ending *-ida* has been proposed following paleontological practice, for most order names in the groups abundant in the fossil record have this ending; the same seems true concerning the subordinal ending *-ina*. I consider these endings as plural for *-idum* and *-ina*, respectively, but I have no special reason for this. Generally speaking, I am ready to consider and accept any better substantiated system of endings, when it will be proposed and accepted by other students.

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Nomenclature for the XXI Century?

by

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The current International Code of Zoological Nomenclature is not the peak of perfection and does deserve further improvement. However, the way and scale of changes reported by Savage (1991), as a supposed proposal by the International Commission of Zoological Nomenclature for the coming meeting of the International Union of Biological Sciences, fill me with misgivings.

The slogan of the proposal is "to free systematic biology from the tyranny of the past" (*Sphecos* 21:17). This sounds too close to what bolsheviks have been practising in my country since 1917 and which resulted in the return of the country back to the Middle Ages. The slogan seems, however, to be only a

manifestation of the more deep and popular drive to free science of elements of the art in order to reach more objectivity. These elements, including the importance of rich personal experience and deep knowledge beyond the particular area of study as the basis of intuition, are destined to be replaced by sophisticated rules and scientific programs which would permit reaching the reproducible (= objective) result irrespective of differences in personal background. I doubt whether the goal is attainable in full. More important, however, is that our slow success in replacing obscure personal creative abilities by explicit rules of research makes such replacement premature as a proximate goal. An attempt to force the process would create unwarranted faith in too imperfect available rules and programs, and would lead to a disregard of the traditional approach. The result will be temporary growth of knowledge acquired accompanied by deterioration of the scientific level, with the balance being highly negative in the long run.

The above considerations are personal and subjective. To balance them, I would further concern myself with more specific problems of the nomenclature.

The proposed regular edition of the Official List of Names in Current Use (LNCU) as an updated *Systema Naturae* for the aims of nomenclature (that is, the one providing the basic array of available names of taxa and invalidating all previously proposed names) does not free taxonomists from the task of choosing between available names. Some LNCU names will be found to be synonymous while among the post-LNCU ones (and between them and LNCU ones) there will be both synonyms and homonyms. The principle of priority will lose much of its domain, for all LNCU-names would have the same date, while the inter-LNCU time interval is supposed to be short enough to leave limited space for the application of the principle. This puts the question of replacing rule, the answer on which being not plain. The principle of priority is congenial to the human mentality because it has its roots in the general respect of elders, and yet I remember when scientists neglected the principle. Still longer can be the way toward the common respect to another principle. If the proposal is accepted, I think it will be difficult to avoid a long chaotic transition period.

No less disturbing is the proposal to limit issuance of taxonomically available names by a selected set of journals, book publishers and languages (further referred to as the Code of publishers and Code languages). This proposal has nothing to do with the misgivings described in the second paragraph, however. Moreover, being successful, this step can improve the state of taxonomy very much. The problem is that success is not easy to achieve, for the proper preparation will take much time, money and effort, while the rush acceptance of the proposal as a law of nomenclature would be disastrous. I mean at least with conditions in the USSR, and possibly in some other countries with good traditions in taxonomy, there is little chance to follow the proposed limitation, unless a reasonably long transitional period will be established accompanied by a special program of assistance.

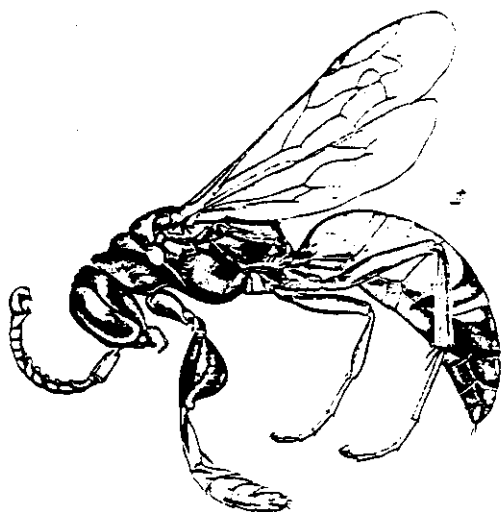
The above apprehension is born by appreciation of the following circumstances. Taxonomists are rather numerous in the USSR, and they provide a considerable amount of taxonomic research. At least part of this work is considered important in the country and abroad. Most of the taxonomists have a rather small knowledge of foreign languages, very few of them have ever published anything abroad, and practically nobody is in the position to meet page charges of western journals. That is why, when confronted with the new rules, it would not be possible for them to obey. Neither will they stop their activity, but being ignored by their Code-adherent colleagues, they would have to work for their immediate community. The result could be a schism in taxonomy and the origin of something awful, similar to the Soviet Creative Darwinism of the 1950s.

To escape this unfortunate perspective, I would suggest several ways to help those experiencing difficulties in accommodating themselves to the new rules of nomenclature. The easiest seems to be to help the better publishers of a nation to reach the level of the Code standards. For this they need to be organized for publication of taxonomic descriptions in the Code languages, including help in the translation and editing of contributions, and probably also in obtaining machines, materials and technology. Also it should be suggested to the existing (foreign)

Code publishers to provide exemptions from the page cost as well as help in translations (or at least in linguistic control of the draft translation submitted) for the taxonomists concerned. Of most help for them would be the availability of funds for covering the publication expenses. And last but not least would be continuing attention to the affected students in order to inspire them to contribute to the Code publishers, e.g., invitations to contribute.

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Didineis nodosa Fox (Sphecidae: Nyssoninae)

Book Reviews, Classifications and Dogma*

by

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In *Sphecos* 20:29, Pagliano and Scaramozzino are said to be guilty of not accepting Brothers (1975) and Gauld's & Bolton's (1988) proposal of only 3 superfamilies of Aculeata. And Menke says that "Catalogs, and similar works... are not the proper vehicles for

making changes in classification since such actions need to be supported by evidence...".

Well, these authors in their very useful work made no change in classification! They simply continued using the usual and very convenient classification most European if not also other hymenopterists prefer, that of the Royal entomological Society *Handbooks* (following O.W. Richards) which is also that of the *Catalog of Hymenoptera North of Mexico* (views of K.V. Krombein still hold in the 1979 edition, with Krombein's comments in vol. 2: 1573).

I believe Pagliano and Scaramozzino were right because Brothers, Lomholdt and others have merely presented working hypotheses which, in spite of their merits, should not imply immediate changes in the usual classification and nomenclature. There are many notes in *Sphecos* (including no. 20) which indicate that Brothers' views are still and will be challenged. And the book of Gauld & Bolton has yet to be accepted by all of us as the dogmatic Bible for Aculeata. Moreover, I find nowhere irrefutable evidence that Börner (1919) and Lanham (1960, 1988) were entirely wrong. We still know no piece of a fossil which could be presented as one of those primitive wasps on the way to becoming a bee, but we are sure that sphecids wasps and bees have gone their own way perfectly separated since more than 100 million years. Thus I do not feel at all motivated to place our good old Sphecidae in "Apoidea" as if they were bees or bees to be.

Classification and nomenclature, pragmatic as they must be, have not the purpose nor even the possibility to reflect correctly hypothetical phylogenies, not even the most elaborate cladistic ones. I do not mind if that attitude seems to be "hors-jeu"; I am quite at ease to note that my views agree on all points with those of one of the most perspicacious zoologist of this century, Ernst Mayr, who wrote to end his still pertinent "Cladistic analysis of cladistic classification" (1974; reprinted 1976): "In conclusion, it is evident that, no matter how useful cladistic analysis is, it cannot be automatically translated into a classification".

SCIENTIFIC NOTES

An Interesting Interaction Between *Steniolia obliqua* and a Large Bombyliidae

by

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While collecting in eastern Nevada this summer, my wife Carla and I both observed an interesting interaction between *Steniolia obliqua* and a large species of Bombyliidae, probably an *Anthrax* on a dirt road in Great Basin National Park. A small stream of water ran across the road and hundreds of sphecids and eumenids darted over the wet earth in great numbers. Again and again we observed the *Steniolia* and the bee flies facing off at about 1.5 feet; they flew about a foot or so off the ground. In every instance that I observed, it appeared that each motion of *Steniolia* was closely mimicked by the bombyliid (or vice versa?) with both insects continuously facing each other. They would fly this way for a few seconds, circling back and forth, until the *Steniolia* would make a lightning fast suike at the bombyliid. Immediately the bombyliid would dart to one side or away. All of the encounters that I observed ended up with the bombyliids apparently escaping, but I did find a well paralyzed bombyliid on the ground where all this was occurring. I have asked Bohart if he has seen similar activity and he tells me that he has not. I am wondering whether anyone else has seen anything like this or know of any references that discuss such behavior. Evans and Gillaspay (1964) have a discussion of *Steniolia* hunting behavior but do not describe something exactly like the above. The behavior of the bee flies is curious because they appear to recognize *Steniolia* as a threat, but do not fly off immediately.

By the way, Carla and I had a wonderful trip through Nevada, Utah, Arizona and Mexico with excellent aculeate collecting. Since we are also both interested in moths (I originally intended to study noctuids and she likes arctiids and sphingids) we have fun collecting night and day.

* title suggested by Menke

***Polistes dominulus* Spreads**

by

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Miles Guralnick of Vespa Laboratories, Inc. (Spring Mills, PA, USA) passed along some additional distributional data for *Polistes dominulus* Christ. One of the collectors, Russell Lamp of Oregon, Ohio, has found this species in Cleveland, Toledo, Oak Harbor, and Oregon, Ohio, and sent specimens. Miles also mentioned that the well-known apiarist, Charles Mraz (Champlain Valley Apiaries, Middlebury, Vermont) reported seeing a new species of *Polistes* in his area and gave a description matching *P. dominulus*; it is hoped he'll provide some specimens next season. Other than these, no additional reports have come to my attention since the last *Sphecos*.

**COLLECTING REPORTS****Irian Jaya**

by

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End of October & early November, 1990, I was in Irian Jaya doing my damndest hunting for wasps and bees with umbrellas (the wasps & bees, that is). We were told "monsoons here start in December". We also found that Sept. and Oct. set rainfall records. This I believe. Despite the weather, had a good time and visited a part of the world I'd always wanted to see.

Flew LA to Biak (island and town); out-rigger canoe to Supiori Island, just north of Biak, where we stayed 2 days in a fishing village, watching the rain come down. Sun came out the day we left to return to Biak. Following return to Biak, flew to Jayapura, then on to Wamena, a large town in a very large valley in the interior of Irian Jaya. Now I know why one of the native names for New Guinea is "land of clouds". Flew

over a lot of beautiful rain forest, inhabited, as we were informed, by "people who still eat people".

Wamena is at an elevation of about 3600 ft., situated in the Baliem Valley, only discovered about 60 years ago. The Dani people are typical Papuans, short, stout, and well-muscled. All those that we met were friendly, helpful, curious, generous, and in need of a bath. The dress code was very casual, ranging from strictly traditional (grass skirts for the women and penis-gourds for the men) to more or less "western". Men often wore shorts and a T-shirt; women, a T-shirt coupled with a loose cotton skirt or the grass skirt. Kids usually naked up to puberty, then taking on adult garb. Since the valley has been under cultivation by the Dani for hundreds of years, undisturbed rainforest is a long hard hike away. I walked some trails (perhaps "slithered, slipped, and slid" would better describe the locomotory method; how the Dani managed to walk upright in that goo is beyond me) and seems there was a village every half mile or so. And, when I came strolling up the trail, the whole village would turn out to stare at this strange, pale fellow with the long hair. Not satisfied with that, they'd then follow me to see what I was up to. And, of course, wanting to help with the result that hordes of kids were galloping along ahead of me to scare or capture (usually by very democratically rendering all arthropods 0.25 mm thick) every critter in the neighborhood.

Despite all this, I picked up a fair number of bees and wasps, especially social wasps (the Dani eat 'em combs and all). The *Rhopalidia* combs (with larvae and pupae) have a smoky flavor. Not bad. Several species each of *Rhopalidia* and *Polistes*; one *Vespa*, which was uncommon, well-known to Dani who were scared spitless of them. None of the *Rhopalidia* at Wamena were at all aggressive and stings were mild. One *Polistes*, related to *tepids*, was pretty hot, and was regarded with respect.

That master peregrinator of aculeate waspdom, *Pachodynerus nasidens* (Latr.), was collected at Wamena, but certainly not common when I was there. I don't recall seeing any New Guinea records for it, but haven't looked too closely into it.

After a week at Wamena, returned to Jayapura for five days of collecting in

the (mostly) rain. Got some good stuff, including a *Rhopalidia* (*R. maculiventris*) which has a sting worthy of some regard; there is a mild tempered *Polistes* there that mimics *maculiventris*. After Jayapura, back to the plane for the harrowing experience of trying to get back to LA. I did get nailed by a resistant strain of *Plasmodium vivax* - the Fansidar doesn't work on this one, at least not in the prescribed treatment. Fortunately it didn't hit until after I got back, but then the current treatment (primaquin) wasn't available - all stocks had been requisitioned for Bush's silly "war".

As reported, my malaria was treated in early Feb. with Primaquin to kill off the beastie. It didn't work and I had a relapse in mid-May, so we will be trying again. This is one tough little bug!

West Africa

by

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I visited the following West African countries on two consecutive trips in 1991: Ivory Coast (5-25 January), Ghana (27 January - 12 February), Togo (12-24 February), Senegal (6-27 July), and Mali (27 July - 25 August). The objective was to collect *Gastrosericus* for my worldwide revision of the genus, a project supported by a grant from the National Science Foundation. Nearly 700 specimens have been collected, probably more than all the museum material worldwide. I was accompanied by Alessandro Mochi (Rome, Italy) in the Ivory Coast and Senegal and by Maximilian Schwarz (Linz, Austria) in Mali. Each person brought back several thousands of aculeates. There were many surprises, both cultural and entomological. We found many undescribed species or species previously known from single individuals. Big roaches crawled over our bodies at night in a small hotel in Linguere, Senegal. An accurate replica of the Vatican basilica suddenly appeared in the bush near Yamassoukro, Ivory Coast. In Ghana, a car could be rented only with a driver, and the cost was exorbitant, close to \$200 a day. Rock formations in central Mali, between Douentza and Hombori, looked almost identical to the mesas of Arizona and New Mexico. The ferry

over the Niger river was delayed because of a camel that was desperately refusing to get aboard. Many cases of leprosy in Senegal and Mali were a sad view.

Wasping in Costa Rica - 1991

by

Arnold Menke

Literally within minutes of completing my manuscript on the New World *Larra*, I was on my way to Washington's National airport to catch a plane for Costa Rica. It was certainly a relief to be finished with *Larra*, since the genus is the biggest taxonomic headache I have ever endured. I flew American Airlines this trip which was a tremendous improvement over Lacs. Checkin etc. was a breeze, and I arrived in San Jose on schedule! I highly recommend them. Frank Parker, who has been in Costa Rica for about 4 years now, working on screw worm, met me at the airport. We loaded my gear in his Toyota Land Cruiser and immediately headed north on the Pan American Highway, bound for his headquarters near the town of Cañas in Guanacaste Province. It was night so I was unable to see much of the countryside enroute.

Frank's USDA screw worm lab is located on the grounds of the Estacion Experimental Enrique Jimenez Nuñez. This large tract of land is managed by the Costa Rican department of agriculture, and it preserves some of the original deciduous forest that once occupied most of the surrounding region now given over to sugar cane, rice, sorghum and other agriculture. This facility is centered on one of the many isolated hills that dot the flatland, and from the heights the huge fields of sugar cane with their white flowers in full bloom create the impression of a vast inland sea. Fish study is one of the activities on the Estacion, and there are a series of large ponds for rearing tilapia and a relative of the pirhana, among other fish. One of these ponds provided a lot of fishing fun and fish dinners for Frank and me. Frank's house is on the grounds of the station, and is complete with cold running water. Much to my surprise, taking a shower was not too much of a shock since the water temperature is fairly warm. Nearly every morning we were serenaded by howler monkeys, which are common at Jimenez.

Frank has been at this location for over two years and has run a number of Malaise traps at Jimenez during that time. He also has traps running in rain forest situations on the slopes of nearby Volcan Tenorio, about a 45 minute drive from Jimenez. Frank (alias the "vacuum cleaner") has amassed a tremendous collection of Costa Rican insects during his stay in the country. It is especially rich in Hymenoptera of course, but like me, he collects everything. All of his material is in the insect collection of Utah State University in Logan, Utah. He ships them boxes of pinned insects and Malaise trap material regularly and anyone working on Costa Rican insects in particular, or Central America in general, is really missing the boat if they do not borrow material from the Utah State Collection (contact Terry Griswold at the Bee Biology and Systematics Lab, UMC 53, Utah State University, Logan, Utah 84321 for loans of material).

Although my official reason for the trip was to collect *Ammophila* and *Larra*, I was keenly interested in the fact that Frank had collected *Bohartella*, including the hitherto unknown male sex, at Jimenez and also in the rain forest in the high country of the Cordillera de Guanacaste. I was anxious to get some of these critters for the USNM. *Scapheutes* was another gem that Frank had taken in the area. Both of these genera were unknown from Central America until Frank found them, a testimony to his collecting prowess. Such discoveries also emphasize how poorly we know the insect fauna of a comparatively well collected tropical country. Frank told me that he had taken 23 different species of *Zethus* from one bush at Jimenez, most of which were unknown from Costa Rica, or were new species!

The morning after I arrived, Frank helped me set up my four "Masner" Malaise traps at Jimenez, took me on a tour of the "good" collecting sites at the station, and then we were off to visit his screw worm attraction sites at a ranch on the western slopes of Volcan Tenorio. We first drove to the town of Cañas which is about 20 km to the north east. Half of the distance is over the very rocky and poorly maintained dirt road that takes you from Jimenez to the Pan American Highway. If you don't have 6 ply tires watch out! From Cañas we continued northward on the PAH to a junction with the road that goes north to

Upala near the Nicaraguan border. Just before reaching the small town of Rio Naranjo we turned off to the right on the dirt road into the Finca Montezuma. This is a very large, very well maintained and landscaped ranch given to cattle raising, coffee growing, and horticulture. By means of a network of primitive roads on the ranch one has access to the surrounding rainforest and prime collecting sites along the roads. Frank took me to most of his screw worm sites. Screw worm adults are creatures of the forest, not cow pastures, and he has been conducting his capture/mark-release/recapture studies in the forest using cow liver as bait. A man is stationed at each site and his job is, among other things, to stare at the liver from the relative comfort of a chair while awaiting the arrival of screw worm adults. A rain tarp suspended from surrounding trees keeps him dry, but foggy/cloudy conditions that commonly adorn V. Tenorio sometimes make the sitting cold. That particular day was one of the cold, wet ones, and Frank and I left sooner than we might have because the drizzle made collecting poor. We picked up a second Toyota jeep for me to use (since I was on official US Government business, this was allowed), and headed back to Jimenez. For the next two weeks Frank would be busy with paper work (he took the Costa Rica job to get out of administration!!!), and the extra jeep would give me the freedom to rove where I wanted.

I spent most of the next two weeks collecting around Jimenez. I netted a lot of material, mostly larger critters, but in general I would describe the collecting at Jimenez as slow. It was the beginning of the dry season, and rains were infrequent. My Malaise traps hauled in a lot of insects (all in alcohol in Whirl-Pak bags) and the best stuff, the microhymens, will be found in this material. The best spot turned out to be a large vine that was in flower - it was attracting all kinds of Hymenoptera, flies, mantispids, and some pretty nifty metallic green "bycids". The main problem was that most of the flowers were out of reach, so Frank gave me a saw and I cut down the small trees that supported the vine, thus bringing the insects down to my level.

Among the wasps I netted *Eremnophila aureonotata* commonly - this wasp is unrecorded south of El Salvador, and Costa Rica is probably the southern end

of its distribution. I also took *Ammophila picipes*, *gaumeri* and *centralis*. I have collected the last two species in the xeric regions of Venezuela previously so these records are not especially noteworthy. Other sphecids taken included *Penepodium*, *Podium*, *Prionyx thomae*, *Isodontia*, *Sphex*, *Sceliphron*, and *Chalybion zimmermanni*. Other sphecids taken included *Cerceris*, *Trachypus*, *Trypoxylon*, *Liris*, *Tachytes*, *Bothynostethus*, *Ectemnius*, *Rhopalum*, and a psenine. I never saw a *Larra* but got one *godmani* in a Malaise trap the first day, the only one taken. I never took a *Bohartella* either, but hopefully some will be found in my Malaise trap samples - I ran two traps in Frank's *Bohartella* spot. I rarely get stung while collecting, but I got zapped on the finger by a *Polistes carnifex* that was in my net. A quick application of Benadryl eased the pain within a minute - I highly recommend this ointment! There were several species of *Polistes*, *Mischocyttarus*, *Zethus*, and other eumenines, and of course there were the usual hoards of several species of *Myzinum*.

Frank runs a light trap behind his lab. Its actually a square cage that acts somewhat like a nocturnal Malaise trap. Anyway, it provided interesting early morning browsing for beetles, moths, orthops, and dobson flies, provided you got there before the birds! I had never seen live specimens of male dobson flies with those huge mandibles, so I had great fun collecting them. Female *Megasoma* occasionally adorned the cage, but no males showed up while I was there.

Over the three day weekend (Veteran's Day), Frank suggested that we go to the beach for some R&R (and collecting, of course!). So off we went to Sugar Beach (Playa Pan de Azucar) on the Pacific coast west of Liberia. I chauffeured Frank in my jeep. While on the Pan American Highway between Cañas and Liberia we passed the turnoff to Lomas Barbudal. At Liberia we took the road to Philadelphia and on that stretch I got stopped by one of the many radar traps that now plague Costa Rican drivers. Frank pulled out his diplomatic license plates, and that took care of an otherwise potentially messy business. The policeman graciously asked me to please try to observe Costa Rican speed limits. At the road junction called Belen, you turn to the right and follow that

road all the way to the coastal hamlet of Brasilito. There are a number of hotels in the vicinity, but the Sugar Beach Hotel is 10 or 11 km beyond Brasilito. One follows the dirt road all the way to the little town of Potrero and about 3 km beyond it is Sugar Beach. The American owned Sugar Beach Hotel is the main feature of this beautiful site. It is managed by Julie and Bill Enell - Julie is a bird lover and has several parrots, one of which is a real talker. The hotel is small, the rooms are clean and air-conditioned, and meals are served in an open air setting with absolutely beautiful views of the Pacific Ocean, especially at sunset. Costs are quite reasonable and the food is excellent. To top it off, at least from an entomologists perspective, the hills directly behind the hotel offer excellent collecting. The land has been opened up by a developer interested in selling lots and there is a network of roads that allow easy access up into the forest. Frank and I spent two days walking these roads and collecting on various flowering plants. The fauna here is essentially the same as at Jimenez, and much of what we collected I had already taken there. However, we captured a lot of *Stictia heros* on the beach along with a species of *Microbembex*. Frank captured a female *Bohartella* right on the hotel grounds! He gave it to me, fortunately. For a guy who is blind in one eye and can't see out of the other, he is an amazing collector!

During the second week at Jimenez I spent a couple of days collecting at one of Frank's former favorite collecting sites just beyond the town of Bijagua. Bijagua is on the road to Upala, just north of the saddle between Volcan Tenorio and V. Miravalles. Unfortunately clouds, fog and rain made for poor collecting both times I visited the forest here, but I managed to get one *Ampulex* and a few orchid bees with Eugenol and Cineole. Capturing the *Ampulex* was a real fluke. I was holding my net against a tree trunk awaiting the right moment to net an orchid bee coming to my attractant, when the *Ampulex* flew into my net!

Frank and I spent one day back at Finca Montezuma and had lots of sunshine and pretty fair collecting on flowering vines and other plants on one of the roads into the coffee fields. Much of the Hymenoptera I caught here were duplicated at Jimenez, but there were rain forest creatures too since the ranch

is an ecotone between the rain forest and the lower elevation deciduous forest.

I had planned on spending three weeks with Frank, but he unexpectedly had to go to Panama on official business, so he and I drove to San Jose at the beginning of my last week. On the mountainous section of the Pan American highway between Puntarenas and San Jose I found out why Costa Rican drivers are regarded as among the worst in the world. In order to get past slow moving trucks, they will pass on curves and other situations where visibility is nearly zero ahead!! I even saw police cars doing it.

When we reached San Jose, Frank dropped me off at the University of Costa Rica where I met Paul Hanson, an American who has been teaching there for about 4 years. Paul graciously offered to put me up at his apartment for the remaining days of my trip. Paul is a hymenopterist - well he works on "doids" - so we had lots to talk about. He and Ian Gauld, of The Natural History Museum in London, are the editors of a book on the Hymenoptera of Costa Rica, a multi-author project that Paul hopes will see the light of day in 1992 or 3. Paul has been running Malaise traps all over Costa Rica for several years and he has amassed a fine collection of insects that naturally is particularly strong in Hymenoptera. Paul's collection has provided the material for most of the chapters in the Hymenoptera book. Among Sphecidae I found a wealth of interesting material. For example he had more than two trays of *Nitela* and three trays of *Pison*. Both genera are usually poorly represented in collections. Anyone working on Costa Rican or Central American wasps would be wise to borrow material from Paul (see his article under Collection News) because the huge INBio collection has very poor representation of small critters (more on that collection later). For example, INBio had no *Nitela* and only two *Pison* specimens.

Paul and Bill Eberhard, who also teaches at the University, took me on a day collecting trip to nearby Ciudad Colón, but I didn't get much. Then Paul managed to get a University vehicle for a day and he took me to Guápiles. The drive took us through Braulio Carrillo National Park, a high, wet forest dotted with *Gunnera*, a plant with giant circular leaves. Guápiles is in the flat-

land on the Caribbean side of the Cordillera. I collected some nyssonins and *Tachysphex* at an agriculture experiment station, but collecting in general was slow, and then it commenced to rain.

The third day Paul's wife, Carolina, took me to the Instituto Nacional de Biodiversidad, otherwise known as INBio. This two year old facility is located between San Jose and Heredia at the tranquil little town of Santo Domingo. One of the goals of INBio is an inventory of the natural history of Costa Rica. This is accomplished largely by highly trained parataxonomists who collect material, mostly in the many national parks and preserves in the country, and forward it to INBio. INBio is the brainchild of Dan Janzen and Rodrigo Gámez, and what has been accomplished in two years is amazing. For the complete story on the collection one should read Janzen's fine 1991 article in the Fall issue of *American Entomologist*, pages 159-171. The "curated" insect collection currently occupies 251 metal insect cabinets, but there are many drawers and Schmidt boxes stacked in the collection hall filled with material that has yet to be labeled and/or sorted and incorporated in the general collection. The curated collection, at least for Sphecidae, consisted mostly of material sorted to genus or to look alike. There are 16 cabinets of Hymenoptera, plus additional material stored in stacked drawers.

This is certainly one of the largest insect collections in Latin America, and at the rate they are adding material, it may be the largest eventually - albeit composed almost entirely of Costa Rican material. Specimens are very well labeled. Geographic coordinates are included on every locality label, and a second label has a bar code for future data capture and specimen tracking.

Currently there are six insect curators with a staff of preparators that label and sort insects. I saw several Apple computers and one was being used to develop an identification guide to the insects of Costa Rica. I only had a few hours at INBio and most of that time was spent sorting their sphecids to genus, but I had the impression that the museum is very well equipped with microscopes, etc.

I was given a tour of a new building now being completed at INBio that will apparently house entomology, botany and possibly other disciplines. 400 emp-

ty insect cabinets reside in a huge hall in this building, for future expansion. I understand that they also have another building on the grounds that is designed to house visitors who desire to go there and work on the collection.

Sorting the 10 drawers of sphecids to genus left me with the feeling that the current inventory is skewed toward larger creatures. For example, they had no *Tachysphex*, *Nitela*, only two *Pison*, only one tray of smaller things like pemphredonines, Crabronini, and Gorytini. The large subfamily Nyssoninae was represented primarily by Bembicini, and there were only a couple trays of those. On the other hand there were 4 drawers of Sphecinae, one of which was completely filled with *Ammophila* (which is great for me since that is my next research project!). There were many specimens of *Ammophila procera*, a species unrecorded this far south in Central America, but one that I had seen from the country previously (there appear to be four species of the genus in Costa Rica). The big subfamily Larrinae was represented primarily by the dominant genera *Liris*, *Tachytes* and *Trypoxylon*. The last genus was represented mostly by larger species such as those found in the subgenus *Trypargilum*. There was only one example of *Larra*.

I was told that much material resides in alcohol and that that is where the small stuff is. But if it is not mounted; it is essentially inaccessible, and the result is a skewed representation of the fauna in the research collection. Clearly the leadership at INBio needs to impress upon their technicians the necessity of collecting and mounting everything, not just the bigger things. After all, in general it is the smaller stuff that is less well known, indeed often unknown! I failed to ask if Malaise traps were used by their collectors, but the absence of small wasps suggests that they may not be. As hymenopterists know, net collecting small wasps requires knowledge of their habits, and often special equipment such as sweep nets. Malaise traps provide one of the best ways to collect large quantities of little creatures.

Another area that could stand more direction at INBio is discretion in keeping material. For example I have been told that there are 3 drawers full of the honey bee, and 10 drawers of the common Neotropical social wasp, *Polistes canadensis*!

As Frank Hovore points out in his glowing report on this collection (*American Entomologist*, Fall 1991, pp. 157-158), anyone working on Central American insects should not fail to borrow material from INBio. But be forewarned that for smaller critters, at least in Hymenoptera, you will find more material in Paul Hanson's collection at the University of Costa Rica. The curator in charge of Hymenoptera at INBio is Jesus Ugalde Gomez, one of Paul Hanson's students, and he should be contacted for loans of material (see Paul's article under Collection News, p. 13, for address).

On my last day in Costa Rica I took a trip with Bob Fisher, a professor from Juniata College in Pennsylvania, whom I met through Paul Hanson. Being a fellow Californian we had much to yak about. Bob rented a car, picked up his bird watcher friend Fletch, and we headed north from Alajuela on the winding road that eventually ends up at La Selva. Our destination that day was a pristine rain forest/river locale known to Fletch that is great for birding, a passion he shares with Bob. About 50 kms north of Alajuela we reached a turn off into the canyon of the Rio Sarapiquí, a location known as Virgen del Socorro (just south of the town of Cariblanco). The river is beautiful and the forest magnificent, but unfortunately for us, it rained nearly all the time we were there and collecting was just about zilch. But I would love to return there some day!

Impressions of Costa Rica? Well it is still a very scenic country with tremendous ecological diversity, nearly 25% of which is conserved in National Parks and other reserves. But crime, at least in the San Jose area, is a problem. If you rent a car, you are almost guaranteed that it will be broken into if not put in a secure place when parked (my friend Bob Fisher, rented two cars and both were broken into!) Collecting permits are not required unless you are in a park, but at the airport I was asked if I had "papers" for the insects I was taking. I showed my US Government travel authorization with the annotation about my wasp collecting activity, and that satisfied the official, but . . .



MUSEUM/COLLECTION NEWS

The Insect Museum at the University of Costa Rica

by
Paul Hanson
(Museum de Insectos
Universidad de Costa Rica
San Pedro, San Jose, Costa Rica)

In addition to the newly founded insect collection at INBio (Instituto Nacional de Biodiversidad), there is another collection at the University of Costa Rica. Although this collection is not as large as that at INBio, it presently has better representation in certain groups, i.e. smaller Hymenoptera and bees. Many of the Hymenoptera have come from an intensive Malaise trapping program that we have been carrying out for the last three years in all parts of Costa Rica. Aculeate workers may want to consider writing to the University insect collection for a loan, especially of those taxa not commonly collected by standard net collecting: bethylids, pemphredonines, crabronines, etc. The bee collection is among the best in Latin America, thanks to the efforts of the first director of this museum, Alvaro Willi.

Much of the recent emphasis in Hymenoptera at the University of Costa Rica collection stems from the "Hymenoptera of Costa Rica" program. The goal of this project is to produce a book with the same title, which will be edited by Ian Gauld (Natural History Museum in London) and myself. We are receiving help from nearly 30 hymenopterists in doing the individual family chapters and many of these contributors have received specimens from our Malaise trapping. One of the aims of this book is to encourage further work on the Hymenoptera of Central America, and of course the collecting will continue even after the book is finished.

Many readers will probably be asking at this point, "Why Costa Rica?" Due to its geographical location, Costa Rica, like other Central American countries, provides an interesting mix of fauna from North and South America. In addition, the altitudinal range (sea level to over 4000 meters) provides an amazing diversity of habitats, from lowland rain forests to higher elevational cloud forests. The northwest part of the country, like

most of western Nicaragua, has a very pronounced dry season. We are just beginning to uncover some of the distributional patterns within the region; for example the sphecids genera *Podalonia* and *Mellinus* seem to be restricted to higher altitudes.

I would like to encourage aculeate workers with an interest in the fauna of this part of the world to visit Costa Rica, and while you're here stop by the University collection and the collection of INBio. If you can't make the trip, write to these two collections for loans. Loan requests from the University of Costa Rica collection can be sent to me: Paul Hanson, Director, Museum de Insectos, Universidad de Costa Rica, San Pedro, San Jose, Costa Rica. Loan requests from INBio may be directed to Jesus Ugalde Gomez, Curador de Hymenoptera, Instituto Nacional de Biodiversidad, Apartado Postal 22-3100 Santo Domingo, Heredia, Costa Rica.

Logistic Support for Collecting in Mississippi

The Mississippi Entomological Museum is conducting a survey from July, 1991 to July, 1992 of selected arthropod taxa in two unique and threatened habitats: the Black Belt Prairie in eastern Mississippi and the loessal hills that border the Mississippi-Yazoo Delta in Grenada Co., Mississippi. The museum is providing a cabin in the loessal hills, a pop-up trailer, prearranged permission from public and private landowners, habitat information, and other logistic support to individuals who are interested in collecting in these areas.

The loessal hills are very rich botanically with an upland mesophytic forest providing a habitat for species characteristic of more northern latitudes and for those that are restricted to rich, undisturbed woods. More than 800 species of vascular plants have been found in the survey area, which has been partially protected from timber harvesting by the steep slopes and deep ravines. Aquatic habitats include seepage areas in ravines, a creek with extensive sandbars dissecting the hills, and the Yalobusha River with oxbow lakes and swamp forest habitats in the adjacent Delta.

The Black Belt Prairie once was one of the largest prairies in eastern U.S., extending on the Cretaceous Selma chalk from north Mississippi to near the

Alabama-Georgia border. Although most of this prairie was lost to agriculture by the early 1900's, several small remnants, 150-500 acres each, have survived in natural condition, other than lack of fire and encroachment of junipers. The flora, which includes species of *Bouteloua*, *Silphium*, *Liatris*, *Petalostemum*, *Blephila*, and other genera characteristic of prairie habitats, has flowering peaks in mid-June and mid-September. Five very good prairie remnants have been located within 30 miles of Starkville, Mississippi. The arthropod fauna includes species that have not been recorded from east of Oklahoma/Texas and other species not recorded west of the Atlantic Coastal Plain.

Other unique and rich habitats in Mississippi include the coastal savannah, which has one of the highest densities of plant species in the U.S. (25 species/0.25 square m), the Ragland Hills (similar to Red Hills in southern Alabama), Jackson Prairie, which originated later than Black Belt Prairie, several bogs, and the bottomland forest between the Mississippi River and its levee.

The cabin in the loessal hills is located in the Malmaison Wildlife Management Area and will be available at no cost to interested researchers/collectors until July, 1992. The cabin has gas, water, and electricity, bathroom, two bedrooms with seven beds, refrigerator and range, and several work tables. The pop-up trailer, which can be loaned for use in other areas of Mississippi, can be towed with any automobile having a ball hitch; the tent encloses two double beds and a work table.

In return for logistic support, the Mississippi Entomological Museum would like to obtain a list of species in the researcher/collector's speciality group or duplicate specimens that are collected in Mississippi. Please contact Dr. Richard L. Brown or Terry L. Schiefer, Mississippi Entomological Museum, Drawer EM, Mississippi State, MS 39762 (ph: 601-325-2085) for cabin/trailer reservations and additional information.



**The Hymenoptera Collection at the
Taiwan Agricultural Research
Institute, Wufeng, Taiwan**
by

Christopher K. Starr
(Dept. of Zoology, Univ. of the West
Indies, St. Augustine, Trinidad)

In the course of compiling data on the present situation in insect/arachnid systematics in Taiwan, the extraordinary Hymenoptera holdings of Taiwan's foremost insect collection have come to my attention. I think they call for some special comment.

Out of an estimated 1.22 million prepared, pinned specimens at the Taiwan Agricultural Research Institute (TARI), 71% are Hymenoptera, and 67% are parasitics. The breakdown, in thousands, is as follows:

Symphyta	10
Parasitica	812
Chalcidoidea	202
Ichneumonoidea	267
Proctotrupeoidea	304
others	39
Aculeata	39
Total	861

The evident reason for the great mass of parasitics is an extensive Malaise-trapping program led by K.S. Lin in the 1980s. The material is for the most part sorted to family, sometimes to subfamily or tribe. A quick look at the sawflies indicates that these also are mainly sorted to family. The aculeates are much less even in their treatment so far. Many are sorted only to order, but I have recently curated the social wasps and some groups of bees.

The Malaise trapping did not of course yield only Hymenoptera. A comparable mass of other insects from this program remains unmounted, sorted only to order. A quick scan suggests that higher flies predominate. This should be brought to the attention of any dip-terist interested in Taiwan.

One other kind of unmounted material should be mentioned. The greater part of the Hymenoptera collected by T.C. Maa in Fujian (=Fukien) province of China during 1934-1949 are at TARI. Prof. Maa tells me that the bulk of the social wasps and bees remained at Fukien Christian University and that their fate is unknown. However, TARI has a cabinet of Maa Hymenoptera from Fujian still in paper wrappers. These include three drawers of polistines and

eight of bumble bees, as well as two each of eumenines, scoliids and sphecids. I suspect that the polistines and bumble bees are each sufficient for a taxonomic review of those groups for Fujian. The special interest in this area, from our point of view, is the very close affinity between the biotae of Fujian and of low and medium elevation areas of Taiwan.

The curators of the TARI insect collection are Mr. L.Y. Chou and Mr. S.J. Fang (Dept. of Applied Zoology, Taiwan Agricultural Research Institute, 189 Chung-cheng Road, Wufeng, Taichung, Taiwan).

**The Museum fur Naturkunde der
Humboldt-Universitat in Berlin and
the Musee Royal de l'Afrique
Centrale in Tervuren**
by

Jim Carpenter
(Museum Of Comparative Zoology,
The Agassiz Museum, Harvard Univ.,
Cambridge, Massachusetts 02138)

I visited the Museum fur Naturkunde der Humboldt-Universitat in Berlin at the end of June. This collection is vast, but has not received the attention it should have, thanks first to the Nazis and the world war, and then the inaccessibility brought about by the Wall. But now that it is accessible again, it should be consulted. It's a world-class collection, with plenty of type material of course, but also unworked material collected in the German colonies in Africa, and places such as Paraguay. Frank Koch or Annette Kleine-Möllhoff have charge of Hymenoptera (Museum fur Naturkunde der Humboldt-Universitat, Invalidenstrasse 43, 1040 Berlin, GERMANY).

I also visited the Musee Royal de l'Afrique Centrale in Tervuren. This collection also is not consulted as much as it should be, although it is known as source of material from Zaire. Not only is it very likely the largest collection of equatorial African specimens anywhere, there's considerable material from other parts of the Afrotropics. For example, I saw a large series of social wasps from Madagascar. Eliane Koninck or Joseph Debecker can be contacted for assistance (Entomologie Section, Musee Royal de l'Afrique Centrale, B-1980 Tervuren, BELGIUM).

TACHYSPHEX REVISION

Wojciech Pulawski (Dept. of Entomology, California Academy of Sciences, Golden Gate Park, San Francisco, Calif. 94118) would like to announce that the price of his monograph, **Revision of North American Tachysphex wasps including Central American and Caribbean species (Hymenoptera: Sphecidae)** (1988. Mem. California Acad. Sci. 10, 211p.), has been reduced to \$30. It is available from Scientific Publications, California Academy of Sciences, Golden Gate Park, San Francisco, Calif. 94118.



NEW BOOKS OF INTEREST

(reviewed by A. S. Menke)

Catalogue of the Mutillidae, Myrmosidae and Bradynobaenidae of the Neotropical Region including Mexico, by G. Nonveiller, 1990. Hymenopterorum Catalogus, Pars 18, 150 pages. (Available from Academic Publishing bv, PO Box 97747, 2509 CG The Hague, Netherlands - price unknown).

The basis of this catalog was a card file generated by the late Francisco Suarez, who hoped eventually to publish it himself. Guido Nonveiller acquired the file, augmented and updated it with some input from Manfredo Fritz who had planned on publishing a Neotropical catalog himself. Fritz went over Nonveiller's ms. and added information from his database. The classification used follows Brothers landmark 1975 paper except that Suarez had elevated the Myrosinae to family. The tribal scheme used in Bradynobaenidae follows Genise, 1986. The catalog contains nearly 1500 species which are spread among 69 genera, the majority in Mutillidae. Nonveiller presents an historic overview of past work on Neotropical Mutillidae, s.l.

The catalog itself lists species in each genus in boldface, alphabetically. Synonyms are indented and in italics. Host information is provided when known. There is no information on type material, but the literature for every entry is in the back of the volume. At the

end of the catalog are a couple pages of species whose status is unclear ("Incertae sedis"). This is followed by an index to taxa, an index to hosts, and the extensive literature section.

Dates of publication have always been one of my "hobbies". Nonveiller was unaware that the plates of Guérin-Ménéville's *Iconographie* of 1844 were published earlier, 1835 in the case of those including mutillids. Cowan (1971, J. Soc. Bibliog. Nat. Hist. 6:18-29) gave an extensive account of the dates for the Guérin-Ménéville work. *Timulla senex* was published in 1835, not 1844. Spinola's 1853 *Compte rendu* . . . Ghiliani dans le *Para* en 1846 was shown by van der Vecht (1975, Ent. Bericht. 35: 60-63) to have first appeared in 1851. This affects the date for *Horcomutilla denticeps* and possibly others. Another thing that I noted in this catalog was the rejection of the 1897 Dalla Torre replacement names. Under the Code, most of these names have priority. For example, the species *damia*, *gratiosa*, *rustica* and *volatilis* in *Pseudomethoca* fall to Dalla Torre replacement names. In *Sphaerophthalma* the species *unicolor* should be called *mendica* Blake because Dalla Torre gave it a replacement name. There are other examples in the catalog.

These comments verge on nit picky however. Any well done catalog provides a valuable database for further research, and this one is no exception. Now all we need is a key to the genera of Neotropical mutillids!!

A catalog of the world Bethyilidae, by G. Gordh assisted by L. Moczar, 1990. Mem. Amer. Ent. Inst. 46, 364 p. (Available from The American Entomological Institute, 3005 S.W. 56th Ave., Gainesville, Florida 32608, price unknown).

The bethylids are the most important aculeate group in terms of biological control, and this catalog brings all taxa in the family together under one cover. Thus this catalog should be useful to a diverse group of scientists.

This catalog is nearly just that since there is precious little in the way of introductory material save the usual acknowledgements and disclaimers. There is also a list of type repositories and their acronyms. It would have been interesting to at least have a summary of the size of the family, and some perspective on higher classification. 104

genera are treated, but that includes at least six fossil taxa as well as five genera whose identity is in doubt. Six subfamilies are recognized, one of which, the Protopristocerinae has no living representatives. Moczar's input was the subfamily Mesitiinae, a group on which he has published extensively.

The catalog is well organized. Genera are arranged alphabetically, synonyms and type-species given, etc., but no textual material is present under generic headings to give the user help in learning something about the genus in question. For example, what keys to species are there for the species of *Goniozus*, the most important genus in biological control? You won't find this information here. In fact the introduction to the book does not even mention the basic revision of the North American Bethyilidae by Howard Evans! Species names are in bold face and listed alphabetically under each genus. Each species entry includes the type locality and location of type material although it is not clear how much of this information was verified. In some cases it is obvious that types were not studied because the depository is preceded by a questionmark. This is something that should have been clarified in the introduction. Species entries also include references to taxonomy, hosts, biology, ecology etc.

Catalogs have so much detail that it is easy to find mistakes, none are immune. This one has its share. For example *Goniozus integer* is not the masculine ending for this species; it is *integer* (integer, integra, integrum). The extensive bibliography looks like a patchwork in places because underlining was sometimes used for publications instead of the commonly used italics. A few citations were incomplete. Spinola's 1851 paper was cited as 1853. Some scientific names were not italicized. These things simply indicate a lack of "final polish" on the manuscript.

What bothers me most about this catalog is that nothing is explained (I have already touched on this). For example, some publications have two dates, one in parens. Which one is the real date of publication? There is no standard to follow here; it should have been explained in the introduction. Then there is the matter of a cutoff date for this catalog's input. What is the year? The bibliography contains some papers from 1989 and even 1990. *Nomena nuda* are indi-

cated in an outline font, but I had to reach this conclusion on my own - it is not specified in the introduction.

Many of the shortcomings noted probably would have been found by reviewers and corrected, or should have been if this work was peer reviewed prior to submission for publication. Journals that accept manuscripts for publication without first submitting them to outside review sometimes end up publishing a paper that reflects poorly on them (and the author).

The chrysidid wasps of the world, by L. Kimsey and R. M. Bohart, 1990. Oxford University Press, Oxford, England, 652 p. (Available from Oxford University Press, Walton Street, Oxford OX2 6DP, England, price unknown).

It is a rare event when an entire family of insects is treated globally under one cover. The reasons are simple: it takes years of research and dedication, and the resulting tome will be costly to publish. So Kimsey and Bohart are to be congratulated for producing this landmark treatise on the cuckoo wasps.

The authors recognize about 3000 species of Chrysididae which are distributed among 84 genera assigned to 4 subfamilies. Kimsey and Bohart estimate that perhaps a 1000 more species await discovery. In their book they present a broad overview of the family, drawing from previously published information as well as their own research; redescribe, reclassify, and key the genera and higher taxa; provide synonymic lists of all species; and discuss problems that await solution.

The authors studied over 2000 type specimens. Each species entry includes type locality, sex and type depository. Presentation of this information represents a lot of hard work, but it will be very useful for future workers. Kimsey and Bohart indicate that they made many new combinations, but did not indicate them because it would have been "cumbersome". To this I can add that they do not provide a list of all the replacement names they propose in the book, or any of the new synonymy. Abstracting all this data will be a real headache for someone and the authors should have included some sort of abstract with this information.

By their own admission the authors have been conservative in recognition of genera, etc. In fact they have employed species groups in place of sub-

genera, an action that readers of *Sphecos* will know is a one I have espoused for a long time. Kimsey and Bohart have not used subspecies. They point out that future workers will have to grapple with this concept when they come to grips with species such as the Old World *Chrysis ignita* which has 34 infraspecific names!

Introductory chapters include Biology, Biogeography (in which fossil species are tabulated), Morphology (nicely illustrated), and General Systematics. The last includes a brief history of previous classifications, and a key to subfamilies and tribes, but the chapter is largely devoted to a discussion of characters of phylogenetic importance. A dendrogram for subfamilies and tribes accompanies the character analysis. No specific outgroup is mentioned and many character discussions do not include reference to non chrysid taxa. The morphology chapter includes a detailed discussion of how to sex specimens, but obviously identifying males and females in Chrysidinae can be a real problem, and unfortunately, the key to higher taxa starts out with sex linked differences.

The bulk of the book is a subfamily by subfamily systematic treatment. Each includes a list of diagnostic characters, a key to genera, and a genus by genus treatment. The generic synonymy for each genus is given, followed by a diagnosis, hosts, distribution, discussion, and synonymical species checklists. Sometimes keys to species groups are provided, and in the larger subfamilies there are character analyses and cladograms. One of the strong points of the book are the many fine illustrations. For example, each genus is represented by a lateral profile, habitus drawing of high quality, these being the work of Karen English-Loeb.

The book contains a lot of mistakes of a minor nature most of which should have been caught prior to publication. The bibliography, for example, contains misspellings, English words in foreign titles, non-capitalized German nouns, incomplete or missing titles and so on. The Historical Overview chapter contains misspelled names of people. In the systematics section, type localities are sometimes assigned to the wrong country or province, or are sometimes misspelled. Other mistakes simply reflect ignorance of geographic history. Lusitania is the Latin name for Portugal - it is

not a locality in that country; Liban (French for Lebanon) is not a locality in Syria. Transylvania is in Romania, not Hungary. Beersheba is in Israel, not Jordan. These sorts of mistakes afflict all large projects, but many of them could have been avoided by careful review.

Such errors really do not diminish the basic value of this book. It will serve as the source for information on Chrysididae for many years, and should stimulate others to "join in the fray". Congratulations, Lynn and Dick!

The social biology of wasps, edited by K. Ross and R. Matthews, 1991. Comstock Publishing Associates, Ithaca, xvii + 678 p. (Available from Cornell University Press, 124 Roberts Place, Ithaca, NY 14850, price unknown).

This impressive tome is an introduction to and overview of present knowledge of the biology of social wasps in the families Vespidae and Sphecidae. It contains 17 chapters (all listed in Recent Literature at the end of this newsletter) by as many different authors, all specialists in the field. All but one of the chapters deals with the Vespidae; the final chapter covers the few social creatures in the Sphecidae. The book is divided into two sections. The first 8 chapters are under the general heading "The social biology of the Vespidae". The second section is titled "Special topics in the social biology of wasps".

James Carpenter's opening chapter contains considerable taxonomic and phylogenetic information on vespids which will be of interest to taxonomists. In scanning through various chapters I noted an apparent general conformity to a conservative approach to generic names. Al Greene, in his chapter on *Dolichovespula* and *Vespula*, states "... a good argument could be made that the switch to splitting the yellowjackets into two genera by North American researchers during the 1970s was based more on excessive enthusiasm than on a judicious appraisal of what constitutes generic-level variation in other groups of social wasps. Be that as it may, the increasing habit of also using *Paravespula* as a genus is totally unjustified by modern taxonomic criteria". Three cheers! I have never seen this thought expressed better.

This fat book reflects the rapid growth in research on the biology of social wasps during the past twenty years or so, the interval since the last such over-

view was published. The biology of the other social Hymenoptera, the ants and bees, was recently subjected to similar reviews. The Ross and Matthews book thus completes a review of sociality in the Hymenoptera.

Natural history of social wasps and bees in equatorial Sumatra, edited by S. Sakagami, Ryoh-ichi Ohgushi, and D. Roubik, 1990. Hokkaido University Press, Sapporo, Japan. xi + 274 p., 8 color plates. (Available from Hokkaido University Press, Kita 9, Nishi 8, Kita-ku, Sapporo 060, Japan, price unknown).

This volume presents some of the achievements from the entomology group of the Sumatra Nature Study project, a cooperative venture by Indonesian and Japanese scientists. This project was initiated by Prof. Shunzo Kawanura of Kyoto University in 1980. It was designed to provide a better understanding of the natural history, ecology, etc. of Sumatra, and help train both Japanese and Indonesian students. The study area is the province of Sumatera Barat in west central Sumatra, an area unusual for its lack of a dry season.

The title of the book is misleading because two of the 14 chapters in the book deal with beetles and bugs. The chapters are the work of 14 collaborators. Of particular interest to readers of *Sphecos* will be chapter one which gives a general overview of Sumatra (physiography, climate, biogeography, human impact), and chapters three to seven which cover the family Vespidae. Chapter three inventories the social vespids of Sumatra and provides identification keys to them. The other vespid chapters discuss nest architecture of stenogastrine vespids, behavior to stenogastrines, and the biology of three species of *Vespa*. The four chapters on wasp biology are well illustrated and some contain fine color photos showing wasp activities and/or nests. There are also six chapters about bees.

The book is printed on high quality paper and rather lavishly done. Four of the 8 color plates of photographs show mostly cultural and scenic wonders of Sumatra, but the last four depict wasps, bees and their nests.

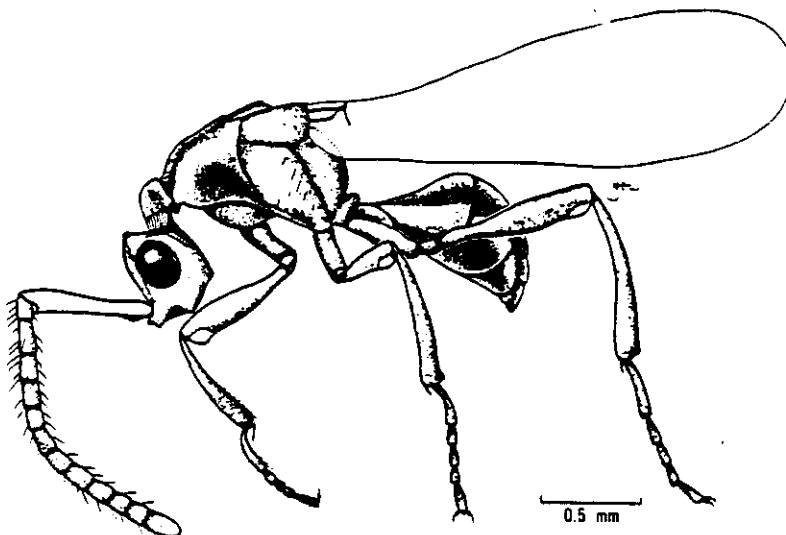
Annotated catalogue of New Zealand Hymenoptera, by Errol Valentine and Annette Walker, 1991. Dept. of Scientific and Industrial Research (Auck-

land, New Zealand); Plant Protection Dept. 4, 84 p. (Available from DSIR Plant Protection, Mt. Albert Research Centre, Private Bag, Auckland, New Zealand, price unknown).

This is the first modern list of New Zealand Hymenoptera. 549 species are catalogued, but the authors point out that the fauna is poorly known for many groups, and the total may be much higher. The Symphyta and Aculeata are poorly represented in New Zealand which simply reflects the uneven representation usually associated with island biotas. There is one bethylid, two dryinids, one mutillid, 40 ants, 11 pompilids, 5 vespids (*s.l.*), and 15 sphecids. All of the vespids are introduced species, as are some of the ants. One sphecid and one pompilid were also introduced.

The literature for the catalog was surveyed through 1987 but I noted some citations from 1988 and 89. Type locality and depository are often given after the species entry. Synonyms, distribution, host information, biology, taxonomy, etc. are provided if available. Besides the main catalog there are appendices that list wasps introduced for biological control (with annotations listing date, target pest, etc.), another that lists species recorded from New Zealand but not established, another listing species wrongly recorded from the country, etc. There are also invertebrate host/parasitoid and plant host/parasitoid lists.

For some reason the Eumenidae is placed in the superfamily Vespoidea, while the Vespidae is located under Pompiloidea! Apoidea includes Sphecidae and Apidae, the latter including all bees, a concept that is becoming more common among Old World workers.



Rhadinocelidia malaysiae (Chrysididae: Loboscelidiinae), known only from a single male specimen.

TREATING HYMENOPTERAN STINGS

The following note was taken from the *Ent. News* (Dept. of Entomology Newsletter, Smithsonian Institution), July 26, 1991:

Dr. Margaret Collins, termite expert and experienced traveler, offers the following information regarding bee stings: "A time-honored and very effective remedy for the pain and associated other consequences of hymenopteran stings (from the formidable Neotropical ant *Paraponera clavata* through the Neotropical bees and wasps) is application of freshly-chopped raw onion or garlic, secured over the sting site with plastic, cloth bandage or large leaf. This treatment even blocks the development of fever, swollen lymph glands and general malaise associated with *Paraponera* stings. Pain relief is immediate and lasting. This remedy does NOT work for scorpion stings; and I have not had a chance to test it on stings from lepidopteran urticating hairs."

By coincidence, a wasp-sting victim contacted the department this morning to gain identification of the species of wasp that stung her in the throat. She advised that a pain-reliever (similar to that stated by Margaret Collins) can be produced from application of moistened tobacco from a cigarette. [see also Menke's Costa Rica trip report on page 11.]

BIG BLUE BOOK ERRATA Part 17

- p. 96, RC, L 19 from bottom: 1911 is correct, not 1902.
- p. 117, LC, L 7: *ssp. sulciscutus* is correct.
- p. 133, RC, L 13 from bottom: change (*Sphex*) to (*Harpactopus*).
- p. 144, RC, L 16: Pakistan, not India.
- p. 162, RC, L 6: *paupera* is correct because gender of genus is feminine.
- p. 291, LC, L 5: Pakistan, not India.
- p. 291, LC, L 26: 1885, not 1884.
- p. 325, RC, L 12: *virginensis* is correct.
- p. 401, LC, L 11 from bottom: 1899 is correct, not 1898.
- p. 401, RC, L 12 from bottom: *majusculus* is correct.
- p. 403, LC, L 11 from bottom: 1934, not 1936.
- p. 424, RC, L 31: 1878 is correct, not 1887.
- p. 428, RC, L 8: Fischer is correct.
- p. 458, LC, insert after line 8 as species: *aculeatus* Cresson, 1865; Cuba.
- p. 470, RC, L 32: 1908 is correct, not 1907.
- p. 521, RC, L 24: 1908 is correct, not 1907.

Jean Leclercq has pointed out that I have been remiss in citing the incorrect date for species described in Lepageletier and Brullé's paper on crabronine wasps. As pointed out by Mick Day in *Sphecos* 2:18, 1835 is the true year of publication, not 1834 (editor).

MORE SCIENCE?

Has the Wandering Wasp,
Pachodynerus nasidens
(Latreille, 1817) (Hymenoptera;
Vespididae, Eumeninae),
a Neotropical Solitary Wasp
that is Extending its Range
Across the Pacific Region
(with Prior Records
in the Hawaiian Islands,
the Marquesas, Christmas Island,
Canton Island, Eniwetok Atoll,
Kwajalein Atoll, and Guam,
at Least According to
Arnold S. Menke
in His 1986 Study of
the West Indies *Pachodynerus*,
Proc. Entomol. Soc. Wash.,
88(4):650-665),
Extended its Range
to Wamena, Baliem Valley
(ca. 160 air miles SSW of Jayapura),
Irian Jaya
(a.k.a. West Irian,
formerly Dutch New Guinea),
Indonesia,
as Evidenced by a Pair of Specimens
Collected there
During the Month of October 1990,
by the Author of this Brief Note,
the Voucher Specimens of which
are Deposited
in the Collections of the
Natural History Museum
of Los Angeles County, Los Angeles,
California, United States of America?
by
Roy R. Snelling
(Natural History Museum
of Los Angeles County,
Los Angeles, California 90007).

Yes.



INQUIERENDA*

Why do many stinging wasps have red abdomens?

* i.e., PUZZLEMENTIA

ANNOUNCEMENTS

The All-Union Entomological Society Section for the Study of Social Insects was organized in 1989. The First Colloquium of the Section was held in Leningrad 2-8 October, 1990. The participants of the Colloquium have elected the Coordination Council of the Section (9 members; chairman - Dr. Vladilen E. Kipyatkov, secretary - Elena B. Lopatina) and discussed the main directions of further work. 31 papers on ants, bumble-bees, honey-bees, termites and wasps presented to the Colloquium have been printed in the Proceedings of the 1st Colloquium (Leningrad, 1991, 212 pp., in Russian with English summaries for most of the papers; available from V.E. Kipyatkov). We plan to establish a newsletter of the Section (two issues in a year, in two languages), to organize the Colloquia of the Section every two years and to publish their Proceedings in Russian and in English. The Second Colloquium of the Section will be organized in September, 1992 in Rybnoe (Ryazan District, about 160 km from Moscow). We would be happy to see our colleagues from other countries among the participants of the Second Colloquium. Interested persons and institutions may contact Dr. Vladilen E. Kipyatkov (Department of Entomology, Faculty of Biology, Leningrad State University, Universitetskaya nab., 7/9, St. Petersburg, 190034, U.S.S.R.).

An International Workshop on Non-*Apis* Bees and Their Role as Crop Pollinators will be held in Logan, Utah, USA in August, 1992. Its purpose will be to facilitate exchange of current information on all aspects of bee biology and to improve prospects for establishing non-*Apis* bees as crop pollinators. The four-day workshop will include both invited symposia and contributed papers. Informal meetings and small workshops are encouraged and will be facilitated. English will be the language of the workshop.

The meeting will be hosted by the Bee Biology and Systematics Laboratory (USDA Agricultural Research Service) and by Utah State University, Logan, Utah. The conference will take place on the University campus where food services and living accommodations will be available. Off campus housing can also be obtained.

DAY 1 will be devoted to the biology, nest associates and management of leafcutting bees (*Megachile*). DAY 2 will be set aside for similar discussions of other pollinators, including *Bombus* and *Osmia*. DAYS 3 and 4 will be reserved for bee ecology, behavior, evolution, biosystematics and other basic research topics.

Logan is situated in a beautiful valley in the Wasatch Mountains of northern Utah. Typical August weather is dry with warm days and cool nights. Commercial alfalfa seed fields pollinated by the alfalfa leafcutting bee (*M. rotundata*) can be visited within a half-day drive of Logan. Many outdoor activities are available, and seven U. S. National Parks are within a one-day drive.

To be put on the mailing list for future announcements and for further information, please contact: Dr. John D. Vandenberg, USDA-ARS Bee Biology and Systematics Laboratory, Utah State University, Logan, Utah, USA, 84322-5310.

3RD BIOLOGY & TAXONOMY OF PARASITIC HYMENOPTERA COURSE

Run by: The Natural History Museum, London (formerly British Museum Natural History) and University of Sheffield.

Venue: University of Sheffield, UK (Residential)

Dates: 5-11 April 1992 (inclusive)

Cost: £550 including tuition, manual, accommodation, breakfast and evening meal.

Further details: Dr. Donald Quicke, Dept. of Animal & Plant Sciences, Sheffield Univ., Sheffield S10 2TN. Tel: (0742) 768555 ext 4628 Fax: (0742) 760159

Student reductions available.



**INTERNATIONAL SOCIETY
OF HYMENOPTERISTS**
14th report IX/1991

The Sheffield meeting was a great success (aside from Tuesday's lunch! - your faithful Secretary was one of those felled by food poisoning), and plans are already afoot for the next Quadrennial Meeting. Many thanks must be extended to Don Quicke and Paul Marsh for their organizational efforts. Among the many excellent presentations were several whose substance will appear in the new *Journal* - **the journal is on its way!** A new dues structure has been implemented because of this. It is also time to begin recruitment of the next cohort of officers. All of these matters, and more, are dealt with in this report. Now indeed ISH is a veritable hive of activity!

**Update on Journal of
Hymenoptera Research**

As you can see by the following announcement, the new *Journal of Hymenoptera Research* is imminent. The first issue is in preparation and should be available by spring of 1992. The list of authors for this premier issue (see p. 20) demonstrates that this publication will be devoted to all aspects of research on Hymenoptera. Please photocopy and distribute the announcement to your colleagues. We especially urge all hymenopterists to encourage their libraries to subscribe to our new journal; the library subscription rate is \$50 per year, a bargain! Members who receive their copy of the first volume should show this to the librarians, who ought to be favorably impressed. Subscriptions should be sent to Treasurer Gibson (address listed on p. 21).

Logo Contest

There is, however, one item to be dealt with before the *Journal* appears. Namely, it needs a logo! We are holding a contest, with a prize of a reduced subscription for the winning entry. Please send your ideas to Editor Smith (Systematic Entomology Laboratory, U.S. Department of Agriculture, c/o National Museum of Natural History NHB-168, Washington, DC 20560) by February 1992.

New Dues Structure

At the business meeting in Sheffield, a new dues structure was approved by the members present. Regular yearly membership is \$25; the student rate is \$15; the sustaining member rate is \$50. The benefits of membership are great! They include a subscription to the *Journal of Hymenoptera Research* and FREE publication privileges in the journal! Where can you get a better deal than that?!

If you are not now a member of the Society, please complete the application on page 21, and return it to the Treasurer.

If you are presently a member of the Society, this is your dues notice for 1992 - complete the same application at the bottom of the journal announcement and return it to the Treasurer.

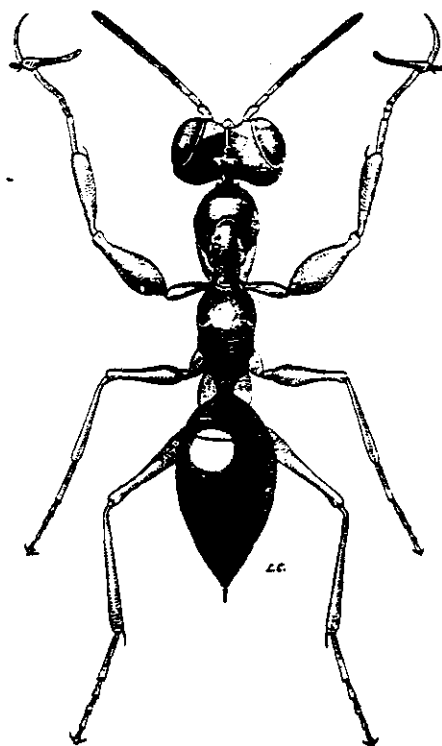
Next Quadrennial Meeting

The next quadrennial meeting is scheduled for 1995 (or 1994 if we decide to hold the meetings in between each International Congress of Entomology). We are looking for facilities that could host such a meeting. The meetings are scheduled for at most six days, probably in the summer months, and the facilities should be able to handle 100-150 people. We are soliciting invitations to sponsor the next meeting. Please send your invitations to President Marsh (same address as Editor Smith). Include a description of the facilities you have and any other information that would make the locality attractive. Please send this information by June 1992; a final decision will be made at the annual meeting in December 1992.

Nominations for New Officers

Three offices must be filled by mail-ballot in 1992. The offices are President-elect, Secretary and Treasurer. All officers serve for a four-year term; in the case of the President-elect, the first two years of the term are as President-elect while the remaining two years are as President. The terms begin at

the close of the next scheduled meeting of the Society after the election, which will be at the Entomological Society of America annual meeting in December 1992. A Nominating Committee has been formed, and is soliciting nominations. The Nominating Committee is: Kees van Achterberg (Nationaal Natuurhistorisch Museum, Postbus 9517, 2300 RA Leiden, THE NETHERLANDS), Andy Austin (Entomology Section, Waite Agricultural Research Institute, University of Adelaide, Glen Osmond, South Australia 5064, AUSTRALIA), Scott Shaw (Department of PSIS, University of Wyoming, P.O. Box 3354, Laramie, WY 82071, USA). The Treasurer must reside in the United States (to protect Society funds from taxation). It would be convenient if the Secretary resided near the Treasurer, but this is by no means required. Please send your suggestions to the Committee - we would like to hold the election in the summer of 1992, and require a slate consisting of at least two candidates for each office.



Plectrogonatopus richardsi Móczár
(Dryinidae: Gonatopodinae)

ANNOUNCING

JOURNAL OF HYMENOPTERA RESEARCH

Published by
The International Society of Hymenopterists

A new journal devoted to all aspects of research on the Hymenoptera
Subject matter may include biology, biocontrol, behavior, ecology,
systematics, taxonomy, genetics and morphology

Anticipated contents of first volume to be issued in early 1992:

- B. Alexander - *An exploratory analysis of cladistic relationships within the superfamily Apoidea, with special reference to sphecid wasps*
- R. Bohart - *A synopsis of the genus Oxybelus in Middle America*
- J. Carpenter & D. Brothers - *Aculeate phylogeny*
- F. Gess & S. Gess - *Nesting ethology of Celonites and Quartinia*
- F. Gess - *A new species of Celonites*
- E. Grissell - *A revision of the genus Perissocentrus (Torymidae)*
- L. Kimsey - *Functional morphology of the abdomen and phylogeny of chrysidid wasps*
- B. Norden, K. Krombein & J. Steinberg - *Mating behavior, male allometry and nesting biology of Perdita graenicheri*
- W. Pulawski & H. Court - *Revision of the genus Hingstoniola*
- D. Rosen & J. Woolley - *Biological and taxonomic studies of Chartocerus subaeneus (Signiphoridae)*
- D. Stoltz & J. Whitfield - *Polydnaviruses and parasitoids: an introduction for Hymenopterists*
- M. Sharkey & D. Wahl - *Cladistic analysis of ichneumonoid families*
- A. Menke - *Mole cricket hunters of the genus Larra in the New World*
- F. Kurczewski, M. O'Brien & M. Spofford - *Nesting behavior of Podalonia robusta (Sphecidae)*
- J. Aeschlimann & R. Hughes - *Collecting Aphelinus spp. in southwestern USSR for pre-emptive biological control of Russian wheat aphid in Australia*
- D. Queller, J. Strassmann & C. Hughes - *Genetic relatedness and population structure in primitively eusocial wasps in the genus Mischocyttarus*
- F. Jachmann & J. van den Assam - *Selective perception in courting male parasitic wasps*
- J. Whitfield - *Phylogeny of non-Aculeate Hymenoptera*
- A. Austin, R. Wharton & S. Cameron - *Molecular techniques in Hymenoptera systematics*
- D. Brothers - *The first Mesozoic Vespidae from the Southern Hemisphere, Botswana*

For information and instructions to authors, write to

David R. Smith, Editor
Systematic Entomology Laboratory
U. S. Department of Agriculture
c/o National Museum of Natural History NHB-168
Washington, DC 20560

Subscriptions for libraries are \$50/year. Send order to the editor (see address above).

Publication in the *Journal of Hymenoptera Research* is **FREE** to members of The International Society of Hymenopterists. To join ISH, complete the membership application below.

1992 Dues Notice - Application for membership in The International Society of Hymenopterists

Name _____ Phone _____

Address _____ FAX _____

Area of interest _____

Membership includes a subscription to and free publication privileges in the *Journal of Hymenoptera Research*. Payment may be made in US or Canadian dollars.

Categories of membership (check one):

Regular _____ \$25 US (\$29 Can) Student _____ \$15 US (\$18 Can) Sustaining _____ \$50 US (\$58 Can)

Also enclosed is my tax deductible contribution of \$ _____ to help support the operation of ISH

Send application with payment to:

Gary Gibson, Treasurer
Biological Resources Division/CLBRR
Agriculture Canada
K. W. Neatby Building
Ottawa, Ontario, Canada K1A 0C6

RECENT LITERATURE

(Worth a look: Gordh & Moczar, 1990; Kimsey & Bohart, 1990; Ross & Matthews, 1991; Sakagami, Ohgushi & Roubik, 1990; Veerech, Mallik & Viraktamath, 1990.)

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Argaman, Q., J. Orousset, and J. Casevitz-Weulersse

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1990. Preimaginal stages of Iberian Sphecidae V. *Sphex rufocinctus* Brullé and *Ammophila laevicollis* Ed. André (Hymenoptera, Sphecidae). *Annl. Hist.-Nat. Mus. Natn. Hung.* 81:239-244.

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Barrington, Rupert

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Beani, Laura and Carlo Calloni

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Belavadi, V.V. and G.K. Veeresh

1990. Prey of polistine wasps in South India, p. 482-483 in: *Social insects and the environment*, Proc. 11th Int. Congress of IUSSI, 1990, edit. by G.K. Veeresh, B. Mallik and C.A. Viraktamath. E.J. Brill, Leiden, 765 p.

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Brockmann, H. Jane

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Carpenter, James M.

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Chandran, Swarnalatha and Raghavendran Gadagkar

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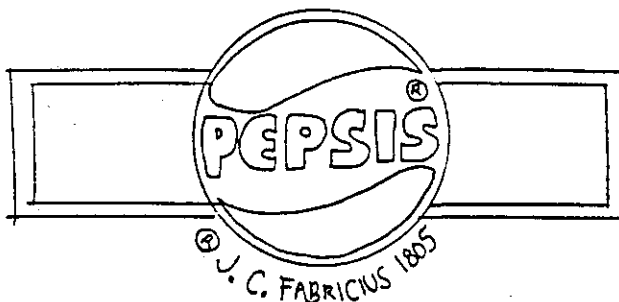
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