

JULY 1994

SPHECOS 27

A FORUM FOR ACULEATE WASP RESEARCHERS

Thank you, thank you, thank you!!!!

In *Sphecos* 26 I outlined the financial crisis that threatened to stop production of this newsletter. My appeal for donations to help defray the cost of reproducing future issues was met by an amazing outpouring of support from the readership. Money began to come in from all corners of the globe in amounts ranging from \$5 to \$250! Some people simply sent cash in the mail, others sent checks, or even foreign currency. Many sent in more than the suggested \$5 donation. We even received donations from Russia and other east European countries in spite of all the financial hardships that people in those nations have. My wife Nancy had actually put up the money to pay for the reproduction of *Sphecos* 26, and within a few weeks the incoming donations reimbursed her outlay. The money has continued to arrive in the mail and we have now built up a sizeable fund to cover the reproduction of the current issue and at least two more! Your generosity is very much appreciated and it will insure the continuance of *Sphecos*. It is very satisfying to know that the efforts of Terry Nuhn and myself are so appreciated.

Donors to the *Sphecos* reproduction fund are listed here in chronological order. Terry, Nancy and I want to thank each of you for your support. We even got \$5 from Bill Ashmead!

A.S. Menke – Editor

Gary Hevel
Karl Krombein
John Heraty
Beth Norden
James Allen
Timothy Palmer
Joan Strassmann
John Moser
David Peckham
Robert Jacobson
Donald Manley
Curtis Sabrosky
Monica Russo
Allan Hook
Stuart Fullerton
Byron Alexander
Ray Gagne
John Heppner
Dave Wahl
Susan Henderson
E. O. Wilson
Vincent Tepedino
George Byers
Charles Michener
Eric Olson
Scott Miller
Robert Akre
Charlotte Gantz
Malcolm Keeping

Mark O'Brien
David Cowan
George Steyskal
Bob Jeanne
Richard Keyel
Robert Wagner
James Cane
Laurene Foye
Akey Hung
YoYo Carpenter
Dave Vincent
William MacKay
James Gillaspay
Barry Nichols
Howard Evans
William Wcislo
Virginia Scott
Jay Rosenheim
Justin Schmidt
Woj Pulawski
Holly Downing
David McCorquodale
Richard Bohart
Robert Matthews
H. Jane Brockmann
Howell Daly
William Clark
Roger Morse
S. Bradleigh Vinson

Steve Marshall
Earle Cross
Kathy Schick
Virendra Gupta
Jerry Powell
Larry Phelps
Larry French
Kevin O'Neill
Michael Engel
Raina Takumi
Yvan Barbier
Ken Cooper
Chris Darling
Larry Bezark
George Ball
David Roubik
Jean Leclercq
Lubomir Masner
Gary Gibson
Mamoru Terayama
David Richman
Hideo Takahashi
Ed Barrows
Grace Middlebrook
James Hunt
Vespa Labs, Inc.
(Miles Guralnick)
Alicia Rodríguez
Wim Klein

Raymond Wahis
Joachim Walther
John Burn
Michael Ohl
Michael Kuhlmann
Volker Mauss
Martin Cooper
Colin Vardy
Akira Shimizu
R. T. Simon Thomas
Alex Rasnitsyn
Eduardas Budrys
Josef Gusenleitner
Seiki Yamane
Junichi Kojima
Akira Shimizu
James Perkins
Mick Day
H. Nagase
Kees van Achterberg
Jan van Zuijlen
Robert Staub
Sean O'Donnell
Alois Kofler
Mike Crosland
Nico Schneider
Enrico Negrisol
Barry Donovan

Italo Currado
Massimo Olmi
Guido Pagliano
Pier Scaramozzino
Jon Seger
Robin Edwards
Michael Archer
Mike Prentice
Jacques Hamon
Elizabeth Chlappa
Haroldo Toro
Hans-Joachim
Jacobs
Henrich Wolf
Leo Castro
John Breen
Anthony Harris
Helen Court
Mary Jane West-
Eberhard
Ian Naumann
Josephine Cardale
John Wenzel
Roberto Cambra
Diomedes Quintero
Frank Crentzburg
Carlos Sarmiento
Frank Kurczewski

hard job for me. I hope to find some taxonomists with better collections than mine, who would like to identify some of the difficult groups for me or confirm my identifications. For example, Prof K. Schmidt (Karlsruhe, Germany) is preparing a revision of the palearctic *Cerceris* and he is very happy to study my material. On the other hand, identifying groups I do not know very well might be the best way to learn much about this group. And I know there is enough for me to learn!"

Massimo Olmi (Dipartimento di Protezione delle Piante, Univ. degli Studi Tuscia, Via S. Camillo de Lellis, 01100 Viterbo, Italy) reports, "My revision of the world Embolemidae is in press."

Monica Russo (1 North Skilling, RR4, Arundel, Biddeford PO, Maine 04005) is collecting wasps from trap nests, and collecting burrowers, diggers and clay-users from open, sandy/clayey areas in Maine. She would be glad to provide specimens to anyone who asks.

Bram Willink (Instituto Miguel Lillo, Miguel Lillo 205, 4000 S. M. de Tucuman, Argentina) writes: "In June I hope to go to Buenos Aires and stay there several weeks working with Arturo Roig; we will see then if it would be possible to finish our *Pachodynerus* work this year. We are now getting to the more difficult and smaller problems related with new species, or doubtful species. We think that the American species are more or less settled, with *acuticarinatus* a synonym of *pulverulentus*, with a darker and a yellower form. *Astraeus* is a synonym of *praecox*. We may write a short paper on the status of the USA species."



HELP NEEDED

Sphecophaga records

Dr. Barry Donovan, a "Science Provider" in New Zealand and formerly of the D.S.I.R., is working on the control of very noxious vespoid wasps with a natural enemy. Dr. Donovan would appreciate distribution and host records

for *Sphecophaga* species (Hymenoptera: Ichneumonidae: Cryptinae) in North American collections. Please e-mail your responses to me and I will send the information to Dr. Donovan. Thanks.

Steven Krauth
Academic Curator
Insect Research Collection
Univ. of Wisconsin - Madison
entcoll@macc.wisc.edu.

Namibian Wasps

In November and December of this year I plan to travel to Namibia and of course I will collect bees and wasps there. As I am not experienced with the southern African fauna, and especially since the G. ARNOLD papers are quite old, I would like to ask if there are any colleagues willing and able to determine Namibian wasps. Raymond Wahis was offered to look at the pompilids.

Michael Kuhlmann
Am Stockpiper 1
D-59229 Ahlen
Germany.

The Monterrey Collection - PLEASE HELP!

Some time ago I received on sub-loan a collection of Pompilidae from Prof. Stehr of the Entomology Museum, Michigan State University. The depository is known only as "Monterrey, Mexico". Some specimens bear det. labels of Dreisbach, 1958. Most specimens are labelled "Monterrey, N.L., Méx." and bear the following collectors' names: M. BERMUDEZ, José CASTILLO, P. CORDERO, Eduardo DIAZ Rubio, Wm.W. GIBSON, S. GONZALEZ, Cesar H. HINOJOSA, R. IGLESIAS, Coronado LEOPOLDO, J. MATHIEU, J.J. McKELVEY, J.S. NIEDERHAUSER, Alejandro ORTEGA, F. PACHECO M., D. PEREZ Ruiz, J.L. SEDDGNO, S. Arturo VALLE, Ricardo YEPIZ R. Can anyone tell me to whom these specimens belong, please?

Colln R. Vardy
Yarina
Springwell Land
Harefield
Middlesex UB9 6PG
England

NEW ADDRESSES

G.R. Brown: Northern Territory Museum of Arts and Sciences, Conacher Street, Bullocky Point, Darwin, N.T. 0820, Australia.

Chen Naizhong: Plant Quarantine Institute, Ministry of Agriculture, 241, Huixinli, Chaoyang District, Beijing 100029, P.R. China.

V.K. Gupta: Dept. of Entomology, University of Florida, Gainesville, FL 32611-0620.

Raymond V. Hensen: Ln Van Vlaanderen 170, 1066 MR Amsterdam, The Netherlands.

István Karsai: c/o Deneubourg, CNPCS ULB, CP 231 Campus Plaine, Bld Triomphe, Bruxelles, B-1050, Belgium.

Marla Litte: 43 E. Ramsey Canyon Rd. #E, Hereford, Arizona 85615-9613.

William P. Mackay: Dept. of Biological Sciences, University of Texas at El Paso, El Paso, TX 79968-0519.

Shizuo Noguchi: Shimoigusa 3-10-12, Suginami, Tokyo, 167 Japan.

Till Osten: Staatliches Museum für Naturkunde, Rosenstein 1, D-70190 Stuttgart, Germany.

Frank Parker: Bee Biology & Systematics Lab, Utah State University, Logan, Utah 84322-5310.

Robert B. Parks: 5301 N. County Road 13, Fort Collins, Colorado 80524-9446.

Robert J. Paxton: Ecological Research Station of Uppsala University, Ölands Skogsby, S-386 93 Färjestaden, Sweden (until 30 September 1994).

Virginia Scott: Museum, Henderson Building, Campus Box 218, University of Colorado at Boulder, Boulder CO 80309-0218.

Martin Sorg: Biologische Station Bergisches Land e.V., Schmitzbüchel 2 D-51491 Overath, Germany.

Hidea Takahashi: Higashiasakawamachi 549-201, Hachiōji-shi, Tokyo 193, Japan.

Mamoru Terayama: Department of Biology, College of Arts & Sciences, The University of Tokyo, 3-8-1, Komaba, Meguro-ku, Tokyo 153, Japan.

Marlus Wasbauer: P.O. Box 6820, Brookings, Oregon 97415.

John W. Wenzel: Department of Entomology, Ohio State University, 1315 Kinnear Road, Columbus, OH 43212-1192.



as an assistant professor of entomology that same year.

He is survived by his wife, Kathleen Eickwort, of Muskegon, Mich.; a daughter, Alex, and a son, Jeffrey, both of Madison, Wisc.; another son, Robert, of Colorado; a brother, John, and his mother, both of Long Island.

from the Cornell Chronicle
July 14, 1994



George Carlos Wheeler
(1897-1991)

George C. Wheeler was a leading authority on ants. He studied under the legendary William Morton Wheeler (no relation) at Harvard University where he received his doctorate in 1921. Along with his research colleague and wife, Jenette N. Wheeler, he published numerous articles on the morphology and systematics of ant larvae, essentially establishing the field from scratch. They also published on the larvae of other social Hymenoptera, including a chapter in *The Social Insects*, edited by H. Hermann (1979) (See *Sphex* 4, p. 40, 50). When I was a graduate student I was fortunate to meet them when they decided to drop by and retrieve a loan from me while visiting the area. I got a frantic call one morning from my major professor telling me they were here and looking through my ant collection! I rushed over to the campus and had time for a short visit. I found him to be kind, gentle person that I could respect as a human being as well as a scientist.

Terry Nuhn



Katsuji Tsuneki¹
(September 12, 1908-February 2, 1994)

The world of wasp research has lost one of its giants, and Japan has lost its most prolific hymenopterist. Katsuji Tsu-

¹In the next *Sphex*, we hope to present an English translation of Dr. Tsuneki's autobiography "Recollection of my Life", published in 1987 in his *Hymenopterists Communication*, vol. 27.

neki, of Mishima, Japan, who had had health problems for some time, succumbed to a heart attack, February 2, 1994, at the age of 85. He had been revising the Japanese bee genus *Sphex*, but the work remains unfinished. Dr. Tsuneki is survived by his wife Sumiko and three sons Tetsuya, Teruo and Sei.

Katsuji Tsuneki was born in Saitama Prefecture, and his parents were Tataro and Masa Tsuneki. He attended elementary and middle school in Saitama Pref., and then went to Tokyo Higher Normal School. He taught at the Utsunomiya girls high school and Keijo high school. Tsuneki worked at the Zoological Institute of Hokkaido University from 1944 to 1952. He received a Ph.D. there in 1950. From 1952 until his retirement in 1973, Dr. Tsuneki was Professor of Zoology at Fukui University in Fukui, Japan.

In 1931-1932 he was a "general soldier", serving as a meteorological observer in the Japan Air Force. From 1937 to 1940 during the Japanese occupation of China, Tsuneki was stationed in northern China and Inner Mongolia. In his "leisure hours", he studied the behavior of ground nesting wasps. Much of this work was published in a 1942 book: "A Naturalist at the Front", Nippon Publishing Co., Osaka (in Japanese). The same year he also published "A Naturalist's year in Inner Mongolia" (in Japanese).

Dr. Tsuneki published his first paper in 1929, some biological observations on a species of *Eumenes*. His last publication apparently was a taxonomic paper on Philippine Mutillidae which constituted issue 41 of the *Special Publications of the Japan Hymenopterists Association* (May 20, 1993). Dr. Tsuneki was a prodigious worker. The total number of publications generated during his lifetime can only be approximated but it exceeds 600.

In his early years he was a student of behavior, and until the late 1940's, nearly all of his papers dealt with the biology of wasps and other insects. In 1946 he published a book in Japanese titled "The Japanese hunting wasps, their ecology and psychology", Northern Publishing Co., Sapporo. In 1948 his extensive behavioral studies of *Bembix niponica* resulted in a book titled "A Research Account of the Japanese Long Nosed Wasp, *Bembix niponica* Smith". The behavioral work carried out by Tsuneki in these early years was first

rate. As he expanded his observations he discovered that much taxonomic work had to be done before he could determine the species that he was studying. Thus he eventually began taxonomic studies of wasps, particularly Sphecidae, but also Chrysididae, Tiphidae, Mutillidae, Scollidae, Pompilidae, Vespidae and bees. Tsuneki's work centered on the Japanese fauna initially, but he published extensively on the wasp faunas of Taiwan, the Philippines, Korea, Mongolia and southeast Asia.

Dr. Tsuneki was dedicated to Japanese natural history, and in 1957 he started a serial publication entitled *The Life Study*, which contained articles in Japanese for and by Japanese students on all sorts of subjects. In 1973, after 17 issues (or volumes), *The Life Study* came to an end. The following year Dr. Tsuneki initiated *The Hymenopterists Communication*, another Japanese language periodical. This journal was designed as a vehicle for papers by Japanese students on Dr. Tsuneki's favorite animals, wasps. Of course, he included his own research in both journals. The last issue of *The Hymenopterists Communication* appeared in 1987 and contained an autobiography of Dr. Tsuneki in Japanese.

While at Fukui University, Tsuneki started a journal titled *Etizenia*, the first issue of which appeared in 1963. *Etizenia* primarily contained taxonomic papers on wasps and was in English. When Dr. Tsuneki retired, *Etizenia* came to an end at 66 issues. Within two years he initiated another journal, the *Special Publications of the Japan Hymenopterists Association*. It appeared from 1976 to 1993 with a total of 41 issues. Most of the papers in it were authored by Tsuneki so that in essence it was his private journal. Papers were in English. During his writing career Dr. Tsuneki published in Japanese, English, German and French.

In the 1960's and 1970's Dr. Tsuneki published many papers on the behavior, biology and breeding of canaries and other birds. In 1971 the Ornithological Society of Japan gave Tsuneki an award in recognition of his ethological and psychological studies of canaries. He also published popular books on spiders and ants.

Some of the major behavior/biology papers by Tsuneki include studies of *Bembix*, *Cerceris*, *Pemphredon*, *Sphex*, and color vision in ants. He published

return home at 3 p.m., so I walked with him to the monorail station to Tokyo where we said our final farewells.

He did not attend the International Congress of Entomology in Kyoto in 1980, and I was unable to visit him. During the early '80s we corresponded frequently on research progress. I was able to assist his revisionary studies by the loan of types and other identified species, especially Oriental *Tiphia* and Philippine Trypoxylini and Larrini, and also by furnishing Xerox copies of literature not available to him. Not all of his waking hours were devoted to revisionary studies, and late in March 1983, he wrote that "spring has come to my little garden and many flowers, including hundreds of camellias, have begun to bloom."

Early in December 1984 he wrote that when his study of Japanese *Tiphia* was completed he would send in increments his collection of Japanese Hymenoptera. During the following February he asked me to send 50 cardboard shipping boxes, saying that "they will move to and from between you and me like space shuttle." During May 1985 he said that he had packed 50 boxes, and would be sending them by airmail. He also mentioned that for some years he had suffered from temporary cerebral thrombus, and that during a recent attack he had suffered a ruptured disk in the lower spine. He was receiving medical treatment, and was able to continue light work. He hired some local help to finish the packing, and get the cartons to the post office. During June and July we received the 21 cartons containing Tsuneki's generous donation.

Subsequently, he wrote of his concern about providing for his wife who was some years younger. We negotiated the purchase of his Taiwanese collection of Sphecidae, Pompilidae, Mutillidae, Scoliidæ, Tiphidae, and miscellaneous Vespoidea and Apoidea made during his two visits in 1966 and 1968. It contained some 7300 specimens, and included the extensive type series of the taxa described in his revisionary papers on those groups of wasps. He sold his large collection of Oriental Chrysididae elsewhere. His final donation to the Smithsonian in 1993 was of the holotypes of some 50 taxa of Philippine Sphecidae and Mutillidae described in several of his most recent papers.

We continued our correspondence and cooperative loans 1985 through

1992. Concerning his health as of August 1992, he wrote that he had "chronic disease of lumbar severance [disk problem ?] and cerebral arteriosclerosis" and was taking medications. He added, "... now for the daily life there is no serious hindrance and am enjoying the wasp study." Actually, he was laboring most of the time on a revision of the Japanese *Sphcodes*, the parasitic halictine bee with bright red abdomen that has such a wasplike appearance, but that study was not completed at the time of his death. The parasitic bees that resembled wasps were his only taxonomic interest among the bees, and earlier (1973) he published what amounted to a large revision of the Japanese *Nomada*.

Tsuneki's long scientific career fell into two phases. At the beginning he was particularly interested in the natural history of solitary wasps. The early technical papers, 1929-1943, were almost entirely on the nesting and other behavior. His systematic papers began in 1945 with short lists of Korean crabronines and chrysidids, but the bulk of his output through the 1940s continued to be natural history studies. His difficulties in providing identifications for the wasps whose behavior he studied led to increasing output of revisionary studies beginning with his treatment of *Pemphredon* of Japan and adjacent regions in 1952. He continued publication of occasional studies of wasp behavior, and his last in 1982 was on the nesting and cocoon construction of *Gorytes tricinctus* that lived "...generation after generation in my little garden." Beginning in 1960 he published predominantly systematic studies including a series of substantial revisions of the Taiwanese and Philippine wasp faunas.

I remember my friend Tsuneki as a generous person, a thoughtful host, and a dedicated scientist who published extensive, well illustrated taxonomic contributions on the Oriental wasp fauna, as well as notable behavioral studies of *Bembix niponica* and various species of *Sphex*.



Souvenir de Paul Maréchal (1889-1973)

par

Jean Leclercq

Faculté d'Agronomie de Gembloux
rue de Bois-de-Breux, 190
B 4020, Liège - Jupille, Belgium

Arnold Menke et d'autres amis voudraient que j'agrémente *Sphecos* de mon histoire personnelle. Cela m'embarrasse parce que je ne vois pas bien comment éviter les excès d'égoïsme ou de modestie. Mais je sais par quoi commencer mon devoir.

Je ne serais probablement pas devenu naturaliste, surtout pas entomologiste et hyménoptériste si je n'avais pas connu Paul Maréchal comme professeur de biologie à l'Athénée Royal de Liège où je fis mes humanités classiques de 1933 à 1939.

Ces humanités, je ne l'ai jamais regretté, attribuaient une importance primordiale à l'étude du latin, du grec et d'au moins deux langues germaniques, tandis que la musique, la chimie et la biologie étaient les moins importantes des branches secondaires. Le programme officiel de la biologie comportait surtout la description et l'anatomie de types tenus pour représentatifs de la diversité des Animaux et des Végétaux. Maréchal avait un certain talent pour présenter ça mais il voulait aussi montrer que la science est affaire de gens curieux et méthodiques, même de modestes amateurs. Je fus très impressionné par la première leçon qu'il nous donna en 1934; j'avais 13 ans.

Pour Maréchal, il était essentiel qu'on commence par apprendre que *les animaux et les végétaux ont un nom scientifique et une place dans la classification, conformément à des règles Internationales dont les premiers principes ont été indiqués «par le grand savant suédois Charles Linné»*. Je l'entends encore nous dicter à peu près ceci:

«Un nom scientifique est composé nécessairement de trois noms: le genre, l'espèce et le parrain (*sic*). Le nom du genre et le nom de l'espèce doivent être en latin; le nom du genre avec une majuscule. Exemples: *Canis familiaris* Linné, *Felis domestica* Brisson. Quand un savant trouve une espèce inconnue (et il y a encore beaucoup d'espèces inconnues), il lui donne un nom qui doit être différent des autres noms d'espèces déjà donnés dans le genre en

mort au front, en mai 1940, de son premier et brillant disciple le biospéologue Robert Leruth; pendant l'Occupation, il refusa de publier mais il continua à étudier les Aculéates, discrètement. Il fut de nouveau actif dès 1945, surtout en militant pour la protection des sites exceptionnels, particulièrement riches en Orchidées et en Aculéates, qu'on trouve de part et d'autre de la frontière entre Liège et Maastricht, dans ce qu'on appelle en Belgique la Montagne Saint-Pierre, dans les Pays-Bas Sint-Pietersberg. Dans cette oeuvre, il fut secondé par son autre disciple hyménoptériste Jacques Petit, qui a continué à surveiller les Hyménoptères de ces sites du côté belge, Virgilius Lefebvre s'en occupant aussi des deux côtés de la frontière.

La vie et l'oeuvre de Maréchal ont fait l'objet d'éloges dans quatre publications dont voici la référence. Mais on n'a publié nulle part la liste de ses travaux; je suis reconnaissant à Sphecos d'accepter la partie de cette liste qui concerne particulièrement ou partiellement des Hyménoptères.

Références

- Jeuniaux, C., 1974. Hommage à Monsieur Paul Maréchal, président du Cercle des Entomologistes Liégeois. *Lambillionea* 77-78:66-68.
- Leclercq, J., 1974. Importance des collections entomologiques de Paul Maréchal (1989-1973). *Natura Mosana* 26(4):109-112.
- Petit, J., 1983. Paul Maréchal et la conservation de la nature. *Revue Vervétoise d'Histoire Naturelle* 40(1-3):2-7.
- Duvigneaud, J., 1985. Paul Maréchal, sa vie et son oeuvre. Allocution prononcée lors de l'excursion du 19 août 1984. *Natura Mosana* 38(2): 52-55.
1923. Liste d'Hyménoptères capturés aux environs de Liège. *Revue Soc. ent. Namuroise* 1923(3):14-16.
1923. Note sur l'état larvaire et l'état nymphal de *Chrysis ignita* L. *Bull. Soc. ent. Belg.* 5:103-107.
1924. Hyménoptères capturés en 1923, principalement aux environs de Liège. *Revue Soc. ent. Namuroise* 1924(1): 5-7.
1925. Deuxième note sur l'éthologie des Chrysidides. *Ann. & Bull. Soc. ent. Belg.* 65:27-33, 196 (addendum: 1929, 69: n° 1).
1925. Liste d'Hyménoptères intéressants. *Rev. Soc. ent. Namuroise* 1925 (2):11-12.
1925. Notes biologiques. *Rev. Soc. ent. Namuroise* 1925(7):58-60 (n°s 1-2: nids de *Vespa silvestris*).
1925. (avec F. Carpentier & A. Crèvecoeur): Liste d'Hyménoptères intéressants. *Bull. & Ann. Soc. ent. Belg.* 65:352-356.
1926. Matériaux pour l'étude biologique des Ichneumonides. *Lambillionea* 1326:50-56, 60-63.
1926. Etude biologique de l'*Osmia aurulenta* Panz. *Bull. biol. de la France et de la Belgique* 60:561-592.
1927. Liste d'Ichneumonides belges intéressants. *Bull. & Ann. Soc. ent. Belg.* 67:126-128.
1927. Etudes sur les rubicoles. 1. *Coelocrabro capitatus* Shuck *Ann. Soc. ent. France* 96:101-109.
- 1927-1929. (avec A. Crèvecoeur): Liste d'Hyménoptères intéressants. *Bull. & Ann. Soc. ent. Belg.* 1927, 67:138-141; 1928, 68:171-175; 1929, 69: 166-171.
1929. Etudes sur les rubicoles. 2. *Rhopalum clavipes* L. et *Rh. tibiale* F. *Ann. Soc. ent. France* 98:111-122.
1929. Sur un nid d'Abelles retournées à l'état sauvage. *Bull. Soc. Sci. Seine-et-Oise* (2) 10:19-23.
1929. Deux drames dans une ronce (*Pemphredon unicolor* Fab., *Prosopis confusa* Nyl., *Gasteruption* sp. et Ichneumonide). *Bull. Soc. Sci. Seine-et-Oise* (2) 10:34-38.
1929. Notes biologiques (1-5). *Lambillionea* 1929:100-103 (guêpe et fourmi; araignée et bourdon; accouplements de *Myrmica ruginodis*; insectes attirés par *Sambucus racemosa*; fourmis et galles du chêne).
1930. Notes biologiques (5-8). *Lambillionea* 1930: 45-47, 110-113 (insectes attirés par *Sambucus racemosa*; *Coelocrabro cinxius*; habitants des galles de chêne).
1930. Sur trois Hyménoptères se développant dans un cocon en mosaïque (*Miscophus spurius* Dahlb., *Oxybelus bipunctatus* Oliv., *Mutilla rufipes* F.). *Mém. Soc. ent. Belg.* 23:1-13. Supplément: *Ibidem* 23:163.
- 1931-1939. (avec A. Crèvecoeur): Matériaux pour servir à l'établissement d'un nouveau Catalogue des Hyménoptères de Belgique, I-IX. *Bull. & Ann. Soc. ent. Belg.*, 1931, 71:102-116; 1932, 72:61-81; 1933, 73:143-160, 373-382; 1935, 75:395-412; 1936, 76:237-257; 1937, 77:445-456; 78:475-508; 1939, 79:439-449.
1932. Notes biologiques (9-14). *Lambillionea* 32:39-42, 227-229, 253-254; addendum 1935, 35:127 (fourmis; galles de Cynipides et leurs parasites, accouplement d'*Eurytoma mayri*).
1932. Quelques remarques sur l'oeuvre et la collection biologique de feu L. Chevalier. *Bull. Soc. Sci. Seine-et-Oise* (2) 13(6/7):85-89 (*Tachysphex*, *Pemphredon*, *Trypoxylon*...).
1932. Sur deux espèces d'Odyneres couramment confondues: *O. (Ancistrocerus) excisus* Ths. et *dusmetolus* Strd. *Bull. & Ann. Soc. ent. Belg.* 72:263-276.
1932. Recherches sur deux Osmies communes: *O. comuta* Latr. et *O. rufa* L. *Soc. Ent. France*, Livre du Centenaire, pp. 505-512.
1933. Sur quelques habitants des chaumes des toitures: *Erlades maxillosus* L. (Hym. Apidae) et ses parasites, principalement *Trichodes alvearius* F. (Col. Cleridae). *Bull. Ann. Soc. ent. Belg.* 73:229-259.
1935. Notes biologiques (15-19). *Lambillionea* 35:78-79, 97-100, 123-126 (*Meqachile circumcincta*, *Coelocrabro ambiguus*, *Psammochares cinctellus*, oeufs transportés par des Sphérides...).
1935. Sur la *Melitta* (ou *Cilissa*) *budensis* Mocs. (Hym. Apidae). *Bull. & Ann. Soc. ent. Belg.* 75:197-165.
- 1935-1938. Insectes intéressants récoltés par le Cercle des Entomologistes Liégeois. *Lambillionea* 1935, 35(2-3), 8 pp.; 1936 (avec F. Darimont), 36:211-220; 1938 (avec J. Leclercq), 38:226-235.
1936. Ethologie des *Trypoxylon* (Hym. Sphég.) et observations sur *T. attenuatum* Sm. *Bull. Ann. Soc. ent. Belg.* 76:373-396.
1937. Recherches morphologiques et systématiques sur les Hyménoptères (1^{re} note). *Bull. & Ann. Soc. ent. Belg.* 77:397-403 (Chrysidides; *Crocisa*).
1938. Notes biologiques (20-26). *Lambillionea* 38:208-215 (*Crabro quadricinctus*; plantes intéressantes pour l'hyménoptériste; fourmis; habitants de galles du chêne...).
1938. Sur trois *Coelinius* de la collection Thomson (Hymén., Braconidae, Dacninae). *Bull. & Ann. Soc. ent. Belg.* 78:201-230.

Publications de Paul Maréchal à contenu au moins partiellement hyménoptérologique

1923. Liste d'Hyménoptères capturés aux environs de Liège. *Revue Soc. ent. Namuroise* 1923(3):14-16.
1923. Note sur l'état larvaire et l'état nymphal de *Chrysis ignita* L. *Bull. Soc. ent. Belg.* 5:103-107.
1924. Hyménoptères capturés en 1923, principalement aux environs de Liège. *Revue Soc. ent. Namuroise* 1924(1): 5-7.

FORUM

Subgenus vs Group of Species
(that is, "species group" sensu
Sphecos 10:11-13, 11:11-13, 26:5)
by

Alexandr P. Rasnitsyn
Paleontological Institute, Russian Academy
of Sciences, Profsoyuznaya Str. 123
Moscow 117647 Russia

I vote against the group of species and in favor of the subgenus, more-over, in favor of a number of subordinate categories between genus and species (subgenus, infragenus, section, etc.), for the following reasons:

(i) The International Code of Zoological Nomenclature (London, 1985) does not mention the group of species (also known under the name of species group, but don't confuse with the species group in sense of the Code!) under the genus group (Article 42a) or the species group (Article 45a). Indeed, the group of species is a surrogate taxon lacking its own name and using the name of its type species instead. Therefore this taxonomic category falls out of the scope of the Code which is defined as operating on the names of taxa, not the taxa themselves (most explicitly: ICZN, Preamble, p. 3; Article 1a).

(ii) Among the key elements basic to the ICZN, and of zoological nomenclature generally, the first cited is "(1) The Code refrains from infringing upon taxonomic judgment, which must not be made subject to regulation or restraint" (ICZN 1985: xiii). Therefore, if I need to have a series of nested taxa subordinate to genus to organize the system of a particular group properly, I should be free to use them.

Response to Rasnitsyn

It is not clear to me why Alex is unhappy with the species group category since he seems interested in using a variety of other infragenic categories. It is true that the Code does not address the species group (or "group of species" in Rasnitsyn's terminology) but that is because there is no need to. That is the beauty of the concept. Species groups convey information without cluttering our huge list of genus-group names. Subgenera have their place, but that taxon is often used to excess when the species group would convey just as much information.

A. S. Menke

SCIENTIFIC NOTES

**Concerning Michael Prentice's
Observations on Aculeate Wasps
in Lebanese Amber.**

by
Alexandr P. Rasnitsyn

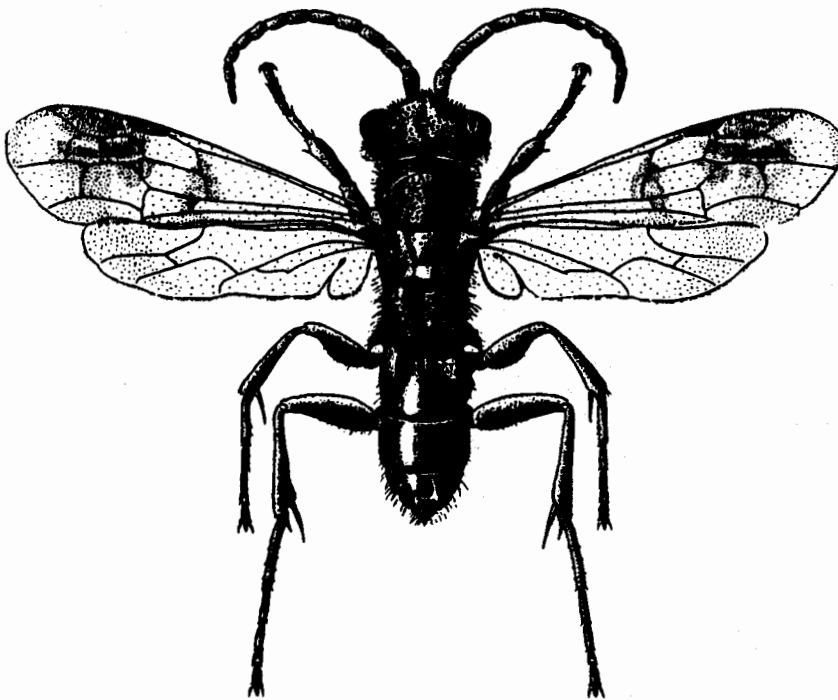
Lebanese amber Hymenoptera represent an ancient and interesting gap in the hymenopteran fossil record.

Hymenoptera have been known to occur in this amber at least since Hennig (1969) (who mentioned an ant, probably erroneously, on p. 366) and Schlee & Dietrich (1970) (who mentioned Terebrantia and Aculeata). Yet Prentice's note (Sphecos 28:8) is the first meaningful information for a quarter of century.

The report of 15 aculeates found in the amber may be comparatively many, or equally may be few. Unfortunately we are not told of the size of the total collection. This is of importance, for some fossil resins give higher percentages of Hymenoptera than others, and their distribution in these ambers is not completely chaotic (Rasnitsyn, 1980: 160, Table 5). This could also prove true for Aculeata specifically.

The composition of the fauna reported by Prentice after a cursory examination of the difficult amber material (Scolebythidae, ?Dryinidae, Bethyidae, and Sphecidae) does not contradict my expectations very much. The absence of Chrysididae is unexpected since this family is common in other known Cretaceous fossil resins. More attention might be given to the Scolebythidae, as the case of *Cretabythus Evans* indicates (despite the general and venational similarity to Scolebythidae it was found to belong elsewhere (Rasnitsyn, 1988)).

The finding of Ampulicinae in this amber is significant. The only other Lower Cretaceous Ampulicinae known are two discovered in the Aptian (middle Lower Cretaceous) of Santana Formation, Brazil. One of them is described as an ant, *Carindris bipetiolata* (Brandao a.o. 1989), another as an unnamed member of Ampulicinae(?) (Darling & Sharkey, 1990: 147). To my mind, both are closely related but distinct at least at the species level. The third Cretaceous ampulicine is *Galbosphex cretaceous* Schlüter (1978: 83) from the Lower Cenomanian (lowermost Upper Cretaceous) of NE France. These findings support the Aptian rather than Neocomian age of the fossil resin at Jezzin in Lebanon (Whalley, 1976).



Dipogon variegatus Spinola (Linnaeus), male. (Pompilidae, Europe, North Africa)

***Podium plesiosaurus* (Smith): the
Second Known Specimen
(Sphecidae)**

by
Arnold S. Menke

This wasp was described in 1873 from a single female taken at Ega (= Tefé), Brasil, and since then apparently has not been collected. I found a specimen of this elegant creature while sorting through tree fogging material collected in Peru by Terry Erwin and his associates. It is a female and agrees with notes and sketches that I made in 1972 while studying Smith's holotype (see Menke, 1974). The locality is Rio Tambopata Reserve (30km SW Puerto Maldonado), 290m, Madre de Dios, Nov., 7, 1983. This specimen is in the National Museum of Natural History, Washington DC.

Menke, A. S., 1974. A preliminary review of the *agile* group of *Podium* Fabricius (Hymenoptera: Sphecidae). J. Wash. Acad. Sci. 63:147-153.

**Further Records of
Neotropical *Pison***

by
Arnold S. Menke

Pison gnythos Menke

PERU, Madre de Dios: Rio Tambopata Res, (30 km sw Puerto Maldonado), 290m,

March 9, 1984, T. Erwin, one female.

This is the first record from Peru for this wide ranging species. The specimen is in the National Museum of Natural History.

***Larra godmani* in southern Texas**

by
Arnold S. Menke

Larra godmani Cameron is recorded from central Mexico to Argentina and Uruguay (Menke, 1992). Recently I identified some miscellaneous *Larra* for Lionel Stange, Florida State Collection of Arthropods, Gainesville, Florida. Among the material were two females of *godmani* collected in Hidalgo County, Texas by Charles Porter. These specimens represent the first US record for this species. Both were taken at the

McAllen Botanical Garden in McAllen, Texas in May 1973 and November 1983. The abdomen is completely red in these specimens and the upper interocular distance = 0.40X the lower interocular distance.

Menke, A. S., 1992. Mole cricket hunters of the genus *Larra* in the New World (Hymenoptera: Sphecidae, Larinae). J. Hym. Res. 1:175-234.

**Identification of Lee's (1986)
new species of
Vespula and *Dolichovespula*
(Vespidae, Vespinae)**

by
Michael E. Archer

Dept. of Science, University of Ripon and
York St. John, York YO3 7EX, England

In 1990 Professor Lee Tiesheng lent me material of the new taxa that he described in 1986. These specimens enabled me to clarify their status (Archer 1993). Professor Lee (1993) has just published a book on the Vespidae of China and other parts of Asia, but apparently my analyses of his taxa appeared too late for inclusion in the book since no mention is made of them. I have seen holotypes of only two of Lee's species, the other material being paratypes. Thus I can only positively identify two of Lee's species. But based on the specimens examined, all of his species, with one exception, appear to be synonyms. The status of Lee's 1986 species is outlined in the list that follows.

Vespula kingdonwardi Archer, 1981

syn.: *V. hirsuta* Lee, 1986 (paratype queen seen).

V. rufa (Linnaeus, 1758)

syn.: *V. obscura* Lee, 1986 (paratype queen seen).

Dolichovespula asiatica Archer, 1981

syn.: *D. xinjiangensis* Lee, 1986, p.p. (allotype male seen).

syn.: *Vespula yichunensis* (paratype male seen). See note below speculating that this specimen may be *Vespula rufa schrenchii*

Radoszkowsky, 1861.

D. lama (du Buysson, 1903)

syn.: *D. nyalamensis* Lee, 1986 (two workers seen).

D. media (Retzius, 1783)

syn.: *D. borealis* Lee, 1986 (paratype worker seen).

D. stigma Lee, 1986 (holotype worker seen).

NEW SYNONYMY *D. sinensis*

Archer, 1987

D. sylvestris (Scopoli, 1763)

syn.: *D. xinjiangensis* Lee, 1986, p.p. (paratype worker seen).

Paravespula koreensis (Radoszkowski, 1887)

NEW SYNONYMY *Vespula*

hainanensis Lee, 1986 (holotype worker seen).

P. flaviceps (Smith, 1870)

syn.: *Vespula gafcilia* Lee, 1986 (paratype worker seen).

The only real ambiguity in the above list is the identification of the male specimen of *Vespula yichunensis* Lee. According to Lee (1986) the male of this species is unknown! The description and illustrations given by Lee (1986) do not agree with the specimen I have seen. The data on the label do not agree with that given in Lee (1986) but do agree with the label data of *D. xinjiangensis*. I suspect that there has been some misplacement of data labels. Thus I have probably not seen *V. yichunensis*. As I indicated earlier (Archer, 1990), *V. yichunensis* is probably a synonym of *V. rufa schrenchii*, but until authentic specimens are seen this view is speculative. I have raised this matter with Professor Lee, but so far I have had no reply.

Literature cited

Archer, M.E., 1990. Some reaction to the book reviews of "A key to the World Species of the Vespinae (Hymenoptera)" with some further information on Lee's "New Species". Sphecos 20:6.

Archer, M.E., 1993. Further news on *Dolichovespula* and Lee's nine 'new' species of *Vespula* and *Dolichovespula* (Vespinae). Sphecos 24:12.

Lee, Tiesheng, 1986. Notes on the genus *Dolichovespula* from China (Hymenoptera: Vespidae). Sinozoologia 10(4):195-200.

Lee, Tiesheng, 1986. Notes on the genus *Vespula* from China (Hymenoptera: Vespidae). Sinozoologia 10(4): 201-206.

Lee, Tiesheng, 1993. The development & utilization of the hornet resources in China. Science Press, Beijing, China. 170 p.

TECHNIQUES

I have one "publishable" comment on Vardy's Chloroform Gun. I have heard about it, and even tried to use an "improved" apparatus. But the thing doesn't work very well, probably due the substitution of the chloroform by ethyl acetate when I tested it. Also, I firmly believe that the *Centris* male (see my report of my collecting trips in *Sphex* 25:16-20) and the *Podium rufipes*, for instance, would fly away in the same way if I had used the C. Gun. They are too fast for a normal human being; one could guess that they had a kind of turbine or rocket somewhere in the body. However, I have to admit that if I had tried to use chloroform instead of any other thing, it could work with creatures that are not as fast, as *Trypoxylon* or *Polistes*. But it won't work with "rocket propelled" sphecids and bees. Another problem would be the large amount of chloroform that I would have to transport during one month, in a van completely filled with all kinds of traps, vials, Berlese funnels, alcohol gallons, axes, a pick and all the stuff that one could imagine for a team composed of myrmecologists, apidologists, termitologists and aculeate hunters. Anyway, I intend to try the C. Gun again in my next collecting trip. That is, if I have more space to transport more things.

Sérvio Túlio Pires Amarante
Museu de Zoologia
Universidade de São Paulo
Caixa Postal 7172
São Paulo, SP, Brazil



COLLECTING REPORTS

Spring Collecting in the
California Coast Ranges

by
Arnold Monke

The focus of this trip was the Spring wasp fauna of the Coast Ranges of California, particularly the sphecid genus *Ammophila*, which is being revised by me. In early May, my wife Nancy, and I flew to San Francisco, rented a car, and

drove south to the hamlet of Parkfield in southeastern Monterey County, an isolated area accessible only by secondary roads, some of which are unpaved. We approached Parkfield from Coalunga. Driving west from Coalunga on highway 198 we reached a dirt road called the Parkfield Grade which winds its way over a mountain and down into the valley where Parkfield is located. The views along this road are pretty nifty, and spring wildflowers were in abundance, but collecting was poor. Parkfield, elevation 1500+ feet, consists of a one room schoolhouse, a small country inn, a cafe, a Santa Fe caboose converted into a store, and a few dwellings. It is situated in a valley containing Little Cholame Creek which flows southward. We stayed at the Parkfield Inn four week-day nights, and were the only guests! Peace and quiet for sure.

Parkfield calls itself the "Earthquake Capitol of the World" because the San Andreas Fault is very close by. A laser beam station has been operating there for about 10 years, monitoring shifts in the fault. We were fortunate to go on a special tour of the laser facility that is perched on a hill just south of town. The tour was given by Duane Hamann, the local school teacher, who operates the station. He has discovered that the Pacific Plate shifts back and forth. Movement is not just northward. The fault runs directly under the 60 year old road bridge just south of Parkfield, and the bridge has a very obvious bend in it due to Pacific Plate movement.

Nancy and I first collected along the edge of Ranchita Canyon road a few miles southwest of Parkfield. *Eriogonum* and other plants were in bloom attracting various Hymenoptera. At this time last year Nancy and I had noted numerous *Ammophila murrayi* here, a coastal endemic, but we had no collecting gear. This time we were prepared. We managed to take *murrayi*, *parkeri*, *karenae*, and *pruinosa*, but collecting was slow. The next day we drove up Slacks Canyon road in Bear Valley, to a spot about a mile beyond the end of the pavement, where Cholame Creek crossed the road. Bear Valley is just west of Parkfield on the other side of the ridge. Initially we collected in the ravine formed by the creek and were rewarded by collecting various wasps and bees. An acrocerid fly, *Turbopsebius diligens* (Osten Sacken) [det. Norm Woodley], was very common at isolated spots in the ravine, and

Nancy and I bagged over 100 of them. We followed the dry creekbed upstream until it more or less ended in a broad meadowy pasture the hilly edges of which were covered with much white sand. An obvious wasp site! We were soon picking up all kinds of wasps along the surface of a dirt road, among them the metallic blue *Dryudella caerulea*, and *Podalonia caerulea*. *Ammophila* were fairly plentiful and we returned to this site the next two days. Species taken here included *Ammophila murrayi*, *parkeri*, *pruinosa*, *parapolita*, *nearctica*, and *strenua*. *A. nearctica* proved to be fairly common and we captured many — the species is not common in collections. During our four days we took 111 *Ammophila*, not a large haul, but we got some fine species.

We greatly enjoyed our stay at the Parkfield Inn. It was so quiet that all you could hear were birds and the breezes in the trees. The local peacock serenaded (?) us at times, and once a herd of escaped cows came through the grounds of the Inn, providing Nancy and me with a few minutes of fun. At \$45 a night for two, the rooms are very reasonable. A continental breakfast is included. The cafe across the street provides great eats and you can play horse shoes out back if you want to. Acorn woodpeckers abound and their chatter often fills the air. We especially enjoyed the morning sun while sipping coffee on the steps of the Inn's veranda. Parkfield is a fine place to get away from it all and enjoy some pretty good collecting, fine scenery and peace and quiet.

We drove back to San Francisco and stayed two days with Woj and Veronica Pulawski. During our stay they organized a dinner get together with Michael Prentice, a grad student at the University of California, Berkeley, who is conducting a landmark cladistic analysis of Sphecidae, and his fiancé Kim Brett. This permitted the three of us to discuss various classificatory problems, and for Woj and I to learn first hand of some of the exciting findings that Michael has made so far.



color by Helmut Riemann. Vol. 2 includes several papers by specialists in which new taxa are described. Of interest to aculeate wasp workers is one on the Bethyliidae by Martin Sorg, one on Chrysididae by Walter Linsenmaier, and one on Pompilidae by Heinrich Wolf.

Of the 319 species treated, 42% are endemic, but the percentage rises to 59% when subspecies are included, bringing the total taxa for the islands to 369. Wasps (including ants) constitute nearly two thirds of the aculeate fauna, with 199 species. There are 120 species of bees.

The introductory and overview material at the beginning of the first volume is in German and Spanish which will make it accessible to a wider audience.

A. S. Menke

The Bee Genera of North and Central America (Hymenoptera: Apoidea). Charles D. Michener, Ronald J. McGinley and Bryan N. Danforth, 1994. Smithsonian Institution Press, Washington D.C. x + 209 p. \$45

This book is primarily an identification guide to the 169 genera and higher taxa of bees of North and Central America, and it achieves this in an admirable fashion. Over half of the book consists of identification keys that are presented in a two column format. The left column is in English, and the right column is in Spanish. This two-language format will make the book user friendly to a much larger audience. The keys are illustrated with high quality line drawings, shaded drawings, photographs, and scanning electron photomicrographs. These figures are scattered through the keys so that they are optimally located for the user. In the introduction users already familiar with bees are told how to streamline their use of the keys. The authors state that the keys have been reviewed and tested by various bee experts. Thus the keys should generally work well.

The introductory section includes information on how to recognize a bee, collection and preservation of specimens, importance of floral records, and terminology, the last very well illustrated.

Following the keys is a section titled "Notes on the genera". Here the user is provided with descriptive notes and distinguishing features for each family and

genus; a synopsis of the classification of each family; and citations of publications containing keys to species, generic studies, etc. For each genus the distribution is summarized, flight periods indicated, and the number of species given. Habitus photographs illustrate species of representative genera, although sometimes drawings are used.

Several appendices at the end of the book include a brief summary of changes in classification and nomenclature (some being newly inaugurated in this volume), a classification of the bees of North and Central America in a tabular format, and anticipated classificatory changes. In the last appendix, we learn that Anthophoridae should be included in Apidae.

This a fine looking, reasonably priced book and it should facilitate identification of bee genera for many people, something that here-to-fore has not been a simple matter. It should also serve as a model for others to follow when developing similar identification guides.

A. S. Menke

Identification Guide to the Ant Genera of the World. Barry Bolton, 1994. Harvard University Press, Cambridge, Massachusetts. 222 p. (Order from the Press at 79 Garden Street, Cambridge, Mass. 02138-9983; USA FAX: 800-962-4983, International FAX: 617 495 8924). List price is \$65, but the book is on special discount at \$52 until November 1, 1994.

This book provides identification keys to the 16 subfamilies and 296 genera of ants. The introduction gives the user a general overview of ants. Bolton estimates that there are about 15,000 species, only two thirds of which have been described. He provides the reader with references to general works on ants, including catalogues, and then presents an overview of classificatory problems, an outline of zoogeography and a discussion of how to properly mount ants. Finally Bolton offers helpful suggestions on how to use the keys. He points out that they are based entirely on workers, and that reproductives are too poorly known for some genera (or even unknown in some groups) to produce useful keys to them.

A diagnosis of the family Formicidae introduces the main part of the book. A

key to subfamilies follows this. The bulk of the book consists of thorough individual subfamily treatments. Each starts with a tabular list of characters, followed by keys to genera (which are by zoogeographic regions in the larger subfamilies), a synopsis of infrasubfamily classification, an accounting of geographic distribution, annotated taxonomic references, and ends with scanning electron photographs of faces and side views of the thorax and abdomen of selected genera. The photographs are quite striking and splendidly display the amazing variety of forms found in Formicidae. The 522 photographs, which are referenced throughout the keys, should enable anyone to identify ant genera. Unfortunately for the user, none of the photographs have generic name identification labels. It would have been more work to label the figures, but it would have been very beneficial.

Other features of the book include a synopsis of extinct subfamilies, references to faunistic papers by country or region, an illustrated glossary of morphological terms, and a terminal bibliography. The glossary is near the end of the book instead of the more traditional position. Terms are given in boldface with "acceptable alternatives in parentheses", however, Bolton is inconsistent. The synonymous terms Flagellum (of the antenna) and Funiculus are both listed in boldface with their counterpart in parentheses. I suppose this is a concession to common usage. Ant workers use "alitrunk" for the mesosoma (or thorax), but as ant classification seems to be based largely on wingless workers, alitrunk is something of a misnomer. Bolton could have advised, as he did for the archaic term epinotum, that the name is used only by myrmecologists. He could have also suggested, as he did under epinotum, that ant workers adopt mesosoma (or thorax), which is nearly universally used in the rest of hymenopterous morphology. These are minor items, however, and in no way diminish the landmark nature of this book. It should be on the shelf of any hymenopterist.

Harvard University Press is to be congratulated on publishing this companion volume to their earlier production, *The Ants*, by Hölldobler and Wilson. Both volumes are quite reasonably priced.

A. S. Menke

**LITERATURE ON THE VESPINAE
OF THE WORLD
(INSECTA: HYMENOPTERA: VESPIDAE)**

BC TO 1992

COMPILED AND PUBLISHED BY ROBIN EDWARDS

A bibliography of 4193 references covering all aspects of wasp biology. Each record includes codes for the language and broad subject area. In some cases, a short note is appended to explain the subject of the paper or to make a comment on the contents. An appendix gives a statistical summary of the records.

The bibliography is laser printed on 197 pages of good quality 90gsm paper, size 210x297mm (A4). It is bound between card covers with a plastic comb binder. Date of Publication: 1994.

Prices:

Institutions: £75 sterling or US\$100 including surface postage.
Individuals: £50 sterling or US\$75 including surface postage.
Airmail extra for all purchasers—

Add: Americas \$US5; Asia US\$7; Australasia £5

Please order from:

Dr. Robin Edwards
5 St Edwards Close
East Grinstead
West Sussex RH19 1JP
ENGLAND

**Bestimmungsschlüssel für die Faltenwespen
(Hymenoptera: Masarine, Polistine, Vespinae)
der Bundesrepublik Deutschland**

and

**Bestimmungsschlüssel für die deutschen Arten
der solitären Faltenwespen
(Hymenoptera: Eumeninae)**

Determination keys to the German Vespidae
by

Volker Mauss, Reinhold Treiber and Christian Schmid-Egger

Published by the Deutscher Jugendbund für Naturbeobachtung (DJN) at Hamburg, this soft cover guide includes sections on biology, collection and preparation, notes on individual species, and a key to nests. Text is in German.

To order, contact: DJN, Justus-Strandes-Weg 14, D-22337 Hamburg, Germany.

RECENT LITERATURE

(Worth a look: McGinley, 1994, Olmi, 1993a, Roig, 1993, Mauss & Treiber, 1994 and Schmidt-Egger, 1994.)

- Akre, Roger D. and Elizabeth A. Myhre
1994. Nesting biology of *Dolichovespula norvegicaoides* (Hymenoptera: Vespidae). Ent. News 105(1):39-46.
- Ansoorge, Jörg
1993. Bemerkenswerte Lebensspuren und ? *Cretosphex catalunicus* n. sp. (Insecta; Hymenoptera) aus den unterkretazischen Plattnerkalken der Sierra del Montsec (Provinz Lerida, NE-Spanien). N. Jb. Geol. Paläont. Abh. 190(1):19-35.
- Antropov, A.V.
1993. Notes on three little known Palaearctic species of digger wasps (Hymenoptera, Sphecidae) Zool. Zh. 72(10):156-158. (In Russian with English summary, *Sceliphron caementarium*, *Ectemnius radiatus*, *Crossocerus tyuzendzianus*)
1994. Sphecids wasps of the genus *Beloniscoides* (Hymenoptera, Sphecidae) of Asia. Zool. Zh. 73(1):89-98. (In Russian with English summary, key to species)
1994. *Alinia carinata* gen. et sp. n. (Hymenoptera, Sphecidae, Crabronini) from South America. Ent. Rev. 72(9):29-32. (English translation) (volume date 1993)
- Archer, M.E.
1994. A phylogenetic study of the species of the genus *Vespa* (Hymenoptera: Vespidae). Ent. Scand. 24:469-478.
- Argaman, Q.
1993. A taxonomic study of Sclerogibbidae especially from the Circumsardinian Islands. Ann. Mus. Civ. Stor. Nat. Giacomo Doria 89:537-553.
- Ariño, A. and C. Sanz de Bremond
1992. La entomofauna fósil del Mioceno superior de la Depresión Ceretana. Hymenopteros. Graellsia 48:99-107. (*Vespa*)
- Bohart, Richard M.
1993. Notes on *Microbembex* with new species from Texas, Mexico, and El Salvador (Hymenoptera, Sphecidae, Nyssoninae). J. Kansas Ent. Soc. 66(3):274-279.
1994. A key to the genus *Tachytes* in America north of Mexico with descriptions of three new species. (Hymenoptera, Sphecidae, Larinae). Proc. Ent. Soc. Wash. 96(2):342-349.
- Brosius, Liz
1994. In pursuit of *Prodryas persephone*: Frank Carpenter and fossil insects. Psyche 101(1-2):119-126.
- Budrys, E.R.
1993. Digger wasps of the subfamily Pemphredoninae (Hymenoptera, Sphecidae) from the Baltic and Talmir amber. Acta Ent. Lithuanica 11:34-56. (5 new genera)
- Burn, J.T.
1993. A host for *Anteon tripartitum* Kieffer (Hym., Dryinidae). Ent. Mon. Mag. 129:85-86.
- Cambrá, Roberto A. and Diomedes Quintero A.
1993. Studies on *Timulla* Ashmead (Hymenoptera: Mutillidae): new distribution records and synonymies, and descriptions of previously unknown allotypes. Pan-Pac. Ent. 69(4):299-313.
- Camillo, Evandro, Carlos A. Gaofalo, Gerson Mucillo and José C. Serrano
1993. Biological observations of *Trypoxylon* (*Trypargilum*) *lactitarse* Saussure in southeastern Brazil (Hymenoptera, Sphecidae). Revta bras. Ent. 37(4):769-778.
- Carpenter, J. M., J.E. Strassmann, S. Turillazzi, C.R. Hughes, C.R. Solís and R. Cervo
1993. Phylogenetic relationships among paper wasp social parasites and their hosts (Hymenoptera: Vespidae; Polistinae). Cladistics 9:129-146.
- Cetkovic, Aleksandar and Guido Nonveiller
1992. First record of male apterity in the genus *Stenomutilla*. *Stenomutilla mutilata* a new species from Ethiopia. Studies on African mutillids (Hymenoptera, Mutillidae) XV. Bol. Mus. reg. Sci. nat. Torino 10(2):393-399.
- Chandrashekara, K. and Raghavendra Gadagkar
1992. Queen succession in the primitively eusocial tropical wasp *Ropalidia marginata* (Lep.) (Hymenoptera: Vespidae). J. Ins. Behav. 5(2):193-209.
- Cubillos G., William A.
1994. Estrategias defensivas de las avispas sociales. Tacaya 2:8-10.
- Dollfus, H.
1993. Aculeate Hymenoptera collected 1985 in the Republic of Central Africa II (Mutillidae, Sphecidae, Apoidea). Linzer biol. Beitr. 25(2):691-694.
1993. Six new species of the genus *Pemphredon* Latreille (Hymenoptera, Sphecidae). Linzer biol. Beitr. 25(2):695-707.
1994. Rote Liste gefährdeter Grabwespen (Hymenoptera, Sphecidae). Rote Listen gefährdeter Tiere Österreichs, 1994, p.95-104.
- Eck, Regine
1993. Wird das Zeichnungsmuster der Arbeiterinnen von *Vespa vulgaris* (L.) durch die im Laufe der Nistperiode wechselnden klimatischen Bedingungen beeinflusst? (Insecta, Hymenoptera: Vespidae). Ent. Abhand. 55 (11):189-183.
- Else, George R.
1994. *Mimumesa unicolor* (Vander Linden, 1829) (Hymenoptera: Sphecidae), a wasp new to the British list, with observations on related species. Ent. Gaz. 45:107-104.
1994. Very late nests of *Vespa germanica* (F.) and *V. vulgaris* (Hym., Vespidae) in southern and central England. Ent. Mon. Mag. 130:75-78.
- Etcheverry, Maria
1993. Los naturalistas de la familia Reed en Chile: Edwyn Charles (1841-1910), Edwyn Pastor (1880-1966) y Carlos Samuel (1888-1949). Bol. Soc. Biol. Concepción, Chile 64:85-95.
- Evenhuis, Neal L.
1994. The publication and dating of P.A. Wytman's *Genera Insectorum*. Arch. Nat. Hist. 21(1):49-66.
- Fernández, Fermádo
1994. Breves observaciones sobre nidos cooperativos en *Trigonopsis violascens* (Dalla Torre) (Hymenoptera: Sphecidae) y *Auplopus* sp. (Hymenoptera: Pompilidae). Tacaya 2:6-8.
- Fritz, Manfred A. and Antonio Martínez
1993. Notas sinonímicas de Mutillidae Neotropicales (Hymenoptera). Rev. Chilena Ent. 20:9-11.
- Furth, David G.
1994. Frank Morton Carpenter (1902-1994): Academic biography and list of publications. Psyche 101(1-2):128-144.
- Gadagkar, Raghavendra
1987. What are social insects? IJSSI Indian Chapter Newsletter 1(2):3-4.
1988. Kin recognition in social insects. IJSSI Indian Chapter Newsletter 2 (1):4-5.
1992. New agenda for social-insect research (book review of: Success and dominance in ecosystems: the case of the social insects, by E.O. Wilson.). Current Sci. 63(3):317-318.
- Ghazoul, J. and P.G. Willmer
1994. Endothermic warm-up in two species of sphecid wasp and its relation to behaviour. Physiol. Ent. 19:103-108. (*Bembix rostrata* and *B. zonata*)
- Gordh, Gordon, Wu Quang Con and Ye. S. Sugonyayev
1993. *Goniolus hanoiensis* Gordh, sp. n. (Hymenoptera, Bethyloidea), a parasite of the rice leaf roller, *Gnaphalocrossa medialis* Guenée, in North Vietnam. Ent. Rev. 72(9):15-24. (English translation) (volume date 1993)
- Guichard, K.M.
1990. New Sphecidae from Spain (Hymenoptera, Sphecidae). Entomofauna 11(16):273-280. (*Didineis*, *Cerceris*, *Psenulus*)
1991. Sphecidae (Hymenoptera) from Jordan including a new species of *Crabro*. Linzer biol. Beitr. 23(1):337-343.
1993. European *Oxybelus* with a note on *Oxybelus dusmeti* Perez, 1966 (Hymenoptera, Sphecidae). Entomofauna 14(33):529-536.
- Gusenleitner, J.
1993. Ein neue *Ancistrocerus*-Art aus Tunesien (Hymenoptera, Vespidae, Eumenidae). Linzer biol. Beitr. 25(2):673-676.
1993. Bestimmungstabellen mittel- und südeuropäischer Eumeniden (Vespoidea, Hymenoptera). Teil 1: Die Gattung *Leptochilus* Saussure 1852. Linzer biol. Beitr. 25(2):745-769.
- Haeseler, Volker
1992. Coastal dunes of the southern North Sea as habitats of digger wasps. p. 351-359 in Coastal Dunes, Geomorphology, Ecology and Management for Conservation, R.W.G. Carter, T.G.F. Curtis and M.J. Sheehy-Skeffington (eds.). Proc. Third European Dune Congress. Belkema, Rotterdam.
1992. Zur Nistweise der Langkopfwespe *Dolichovespula media* Retzius (Hymenoptera: Vespidae). Faun.-Ökol. Mitt. 6:287-297.
1993. Zur Bionomie der zwischen Pflastersteinen nistenden Wegwespe *Anoplius concinnus* (Dahlboom 1845) (Hymenoptera, Pompilidae). Mitt. Dtsch. Ges. Allg. Angew. Ent. 8:573-589.
- Hamon, Jacques
1994. Bibliographie: Jacques Bitach et Jean Ledercq. - Hyménoptères Sphecidae d'Europe occidentale.. Volume 1. Bull. men. Soc. linn. Lyon 63(4): 100.
- Hamon, Jacques, Antoine Foucart and Robert Fonfria
1993. Notes sur les *Bembecinus* de France continentale et de Corse (Hymenoptera, Sphecidae). Bull. Soc. ent. France 98(5):463-471.
- Hardy, David L., Sr.
1994. *Bothrops asper* (Viperidae) snakebite and field researchers in Middle America. Biotropica 26(2):198-207.
- Heine, Walter and Heinrich Wolf
1992. Neue Nachweise von Hornissen und zwei weiteren Papierwespen-Arten (Hymenoptera: Vespidae) im südlichen Sauerland. Sauerländ. Naturbeobachter 22(1991/92):34-36.

- dae). *Boll. Zool. agr. Bachic. Ser. II*, 25(1):57-89. (subfam. *Thammatodryininae* synonymized with *Dryininae*, much generic new synonymy in *Dryininae* and *Gonatopodinae*, keys to genera of both subfamilies)
- 1993b. *Dryinidae* from the Bókk National Park (Hymenoptera: Chrysididae), p. 407-409 in: *The Fauna of the Bókk National Park*.
- Osten, Till
1993. *Zwitter von Micromeriella aureola* (Klug 1832) (Hym. Scolidae). *Linzer biol. Beitr.* 25(2):1013-1014.
- Pagliano, Guido
1993. Una specie nuova di *Oryzus* Spinola dell'Argentina. *Boll. Soc. ent. Ital., Genova* 125(2):101-102.
- Prentice, Michael A. and George O. Poinar, Jr.
1993. Three species of *Trypoxylon* Latreille from Dominican Amber (Hymenoptera: Sphecidae). *J. Kansas Ent. Soc.* 66(3):280-291.
- Quintero A., Diomedes
1993. Feeding upon spiders by female pompilid wasps, p. 127 in: 30th Anniversary of the Association for Tropical Biology. Thirty years of tropical biology: Organisms to global change. Univ. Puerto Rico, San Juan.
- Quintero A., Diomedes, and Roberto A. Cambra
1993. *Anolis tropidogaster* (NCN). *Behavior. Herpetological Rev.* 24(3):104-105. (paralyzed spider stolen from a pompilid wasp)
- Ratrieks, Francis L.W. and Donald G. Miller
1993. Two polygine overwintered nests of *Vespula vulgaris* from California. *Psyche* 100:43-50.
- Rodriguez-Palaez, Alicia
1988. Las avispas sociales (Hymenoptera: Vespidae: Polistinae) de Chamela, Jalisco. *Folia Ent. Mexicana* (77):495-516.
- Roig-Alains, Arturo
1993. The evolution of the apoid endophallus, its phylogenetic implications, and functional significance of the genital capsule (Hymenoptera, Apoidea). *Boll. Zool.* 60:169-183.
- Rond, Jeroen de
1994. *Bethylus hyalinus*: a freak after all! (Hymenoptera: Bethyidae). *Ent. Ber.* 54(2):20-22.
- Sanchez A., Coralia and Julio Antonio Genaro
1992. Observaciones sobre la conducta de nidificación de *Hoplosoides ater* y *H. jaumei* (Hymenoptera: Sphecidae). *Ciencias Biol.* 25:150-154.
1992. Observaciones sobre la conducta de nidificación en estécidos de Cuba (Hymenoptera). *Bicyrtes spinosa* (Fabr.). *Poeyana* (411):1-8.
- Sarmiento M., Carlos E.
1993. Abejas y Avispas (Hymenoptera: Apidae, Vespidae, Pompilidae y Sphecidae) del Santuario Nacional de Flora y Fauna de Iguaque, Boyaca, Colombia. *Bol. Mus Ent. Univ. Valle* 1(2):1-11.
- Silveira, O.T.
1994. External morphology of the larva of *Pseudochartergus chartergoides* (Gribodo) (Hym., Vespidae, Polistinae). *Ent. Mon. Mag.* 130:71-75.
- Schmid-Egger, Christian
1994. Bestimmungsschlüssel für die deutschen Arten der solitären Faltenwespen (Hymenoptera: Eumeninae). *Deutscher Jungendbund für Naturbeobachtung, Hamburg*, P. 54-90.
- Schneider, Nico and Annie Jacob-Ramadé
1992. Contribution à la connaissance de l'entomofaune d'Ettebruck et de ses environs: Psocopteres et Hymenopteres aculeates. *Etudes de Biologie, Fac. II*, p. 29-81.
- Schneider, Nico and Jean Weiss
1993. Wildbeienenhaltung im Garten. *Schweiz. Bienen-Zeitung* 116(3):138-141.
- Schwammberger, Karl-Heinz
1993. Freilandbeobachtungen zur Nestübernahme bei *Polistes biglumis bimaculatus* (Geoffroy) durch den Sozialparasiten *Sulcopolistes atrimandibularis* (Zimmermann) (Hymenoptera, Vespidae). *Zeitschr. Ang. Zool.* 79(3):291-297.
- Smitsen, Jane v.d.
1993. Zweiter Beitrag zur Bienen- und Wespenfauna im südöstlichen Schleswig-Holstein und nordöstlichen Niedersachsen (Hymenoptera: Aculeata). *Drosera* 93(1/2):125-134.
- Sorg, Martin
1993. Bethyiden der Kanarischen Inseln (Insecta: Hymenoptera: Chrysididae: Bethyidae) (Derzeitiger Stand der Bearbeitung) *Verhöl. Übersee-Museum Bremen (Naturwiss.)* 12:713-720.
- Sorg, Martin and Werner Stenmans
1992. Wildbeienen und andere Hautflügler der Kerfelder Naturpfade. Eine Gegenüberstellung der Lebensstätten einzelner Arten aus historischer und heutiger Sicht. *Die Heimat* 83:81-85.
- Sorg, Martin, Heinrich Wolf, Doris Beutler, Horst Beutler and Werner Stenmans
1993. Wegwespen Pompilidae vom Großen Griesensee bei Storkow (Kreis Beeskow). *Natur und Naturschutz auf Truppenübungsplätzen Brandenburgs, Folge 4. Naturschutz Landschaftspflege Brandenburg* 3:11-15.
- Takahashi, Heido
1992. A list of the aculeate Hymenoptera from Aogashima Island of the Izu Islands. *Genesl* 59,60:27-28.
1993. Flower-visiting activities of the aculeate wasps on Hachijo-jima Island of the Izu Islands. *Biol. Mag. Okinawa* 31:1-8.
- Tobias, V.I.
1993. Dependence of wing venation in the Hymenoptera on ecological environment of their habitats. *Ent. Obozr.* 72(3):497-506. (in Russian with English summary)
- Togashi, Ichiji
1993. Hymenopterous insects settling in cottage with a thatched roof in Shiramine, Ishikawa Prefecture (Part 3). Eumenid and cuckoo wasps. *Bull. Biogeogr. Soc. Japan* 48(1):59-63.
- Toro, H., E. Chiappea, R. Covarrubias and R. Villaseñor
1993. Interrelaciones de polinización en zonas áridas de Chile. *Acta Ent. Chilena* 18:19-30.
- Tribe, G.D. and D.M. Richardson
1994. The European wasp, *Vespula germanica* (Fabricius) (Hymenoptera: Vespidae), in southern Africa and its potential distribution as predicted by ecoclimatic matching. *African Ent.* 2(1):1-6.
- Tussac, Hubert and Marc Tussac
1993. Description d'une nouvelle espèce, *Philoctetes delvare* (Hymenoptera, Chrysididae). *Bull. Soc. ent. France* 98(5):473-475.
- Venkataraman, Arun B. and Raghavendra Gadagkar
1992. Kin recognition in a semi-natural context: Behaviour towards foreign conspecifics in the social wasp *Ropalidia marginata* (Lap.) (Hymenoptera: Vespidae). *Ins. Soc.* 39:285-299.
1993. Differential aggression towards alien conspecifics in a primitively eusocial wasp. *Current Sci.* 64(8):801-803.
- Villalobos, Ethel M. and Todd E. Shelly
1994. Observations on the mating behavior of male *Stictia heros* (Hymenoptera: Sphecidae). *Fla. Ent.* 77(1):99-104.
- Weaving, Alan J.S.
1994. Notes on nesting behaviour in two Afrotropical euplopine wasps, *Euplopus vitripennis* Smith and *A. femoralis* (Arnold) (Hymenoptera: Pompilidae). *Entomologist* 113(2):140-153.
- Willink, Abraham and Elizabeth Chiappa
1993. Lista de las especies chilenas de la familia Vespidae (Hymenoptera: Vespidae) *Acta Ent. Chilena* 18:119-125.
- Wolf, Heinrich
1992. Zur Kenntnis der Hautflügler-Fauna an der Burgruine Schwarzenberg bei Plettenberg, Märkischer Kreis, Sauerland. *Naturbeobachter* (22):14-29.
1992. Zur Kenntnis der Hautflügler-Fauna des Naturschutzgebietes Langelosen-Wilhelmstal (4. Beitrag). *Sauerland. Naturbeobachter* (22):30-33.
1993. Beitrag zur Stechimmen-Fauna (Hymenoptera, Aculeata) einer Brenne bei Gersthofen. *Ber. naturw. Ver. Schwaben* 97:13-15.
1993. *Zwitter von Arachnospila anceps* (Wesmeel) (Hym., Pompilidae), *Andrena fulva* (Möller) und *Megachile maritima* (Kirby) (Hym., Apidae). *Linzer biol. Beitr.* 25(1):123-125.
1993. Katalog der österreichischen Wegwespen (Insecta, Hymenoptera, Pompilidae). *Linzer biol. Beitr.* 25(2):993-1011.
1993. Neue kanarische Pompiliden (Insecta, Hymenoptera, Pompilidae). *Verhöl. Übersee-Museum Bremen (Naturwiss.)* 12:733-741.
- Wootton, Robin
1994. Frank Morton Carpenter (1902-1994). *Antenna* 18:56-58.

Arpactophilus mimi Naumann,
female.
(Sphecidae,
Northern Territory,
Australia)

