

ICHNEWS



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EDITORIAL NOTES

With this second issue of the re-incarnated ICHNEWS we welcome the ichneumonid-types back into the fold. Mike Fitton and Ian Gauld at the British Museum kindly (actually I noted a sigh of relief!) turned over their ICHNEWS files to us. Thus, this issue's notes, references and directory include the Ichneumonidae as well as Braconidae. Remember, the "ICH" refers to Ichneumonoidea.

As was pointed out by several of you, the last ICHNEWS was incorrectly issued as number 7 when it should have been number 8. This present issue is correctly number 9.

With the inclusion of the Ichneumonidae, our directory numbers 160 people. Of these, 94 have responded to the last questionnaire. This is about 2/3 of the list which is not too bad. But we hope to have a better response by next issue. We have not decided to drop any one from the mailing list who does not respond. But, because of mailing costs and limited budgets, this may be necessary in the future. The Directory with this issue includes the research area and interests of those who returned the questionnaire, as well as information from the old ICHNEWS files.

As we stated in the last issue, we encourage all readers to contribute news items or longer articles to ICHNEWS. Detailed reports on your research or collecting trips are welcome as are reports on collections and museum trips. Don't wait for the next questionnaire - send us items as the spirit moves you! We still would like to start a Forum section for your ideas and comments on special themes and/or issues. We suggested the placement of the Aphidiidae as a start but no one responded. Put your thinking caps on and let us hear from you.

All responses for the next issue should be sent to Mike Sharkey in Ottawa.

Paul M. Marsh

CONTRIBUTORS

Project Wallace - An Entomological Extravaganza

by Andrew Austin

1985 saw the largest entomological expedition ever mounted. Over 120 research workers and more than 50 support staff spent varying lengths of time in and around the Dumoga-Bone National Park, North Sulawesi, an area of approx. 300,000 hectares of primary forest, comprising one of the largest national parks in Asia. Project Wallace takes its name from the famous victorian naturalist, Alfred Russel Wallace, who, during the 1850's, spent eight years in Southeast Asia collecting natural history specimens (mostly insects) in various countries, including Sulawesi. The Project was organized by the Royal Entomological Society to commemorate the 100th anniversary of its Royal Charter (1985) and the 150th anniversary of the Society itself (1983).

Sulawesi is centered in the area of Southeast Asia that has become known as Wallacea - that region between Wallace's and Weber's lines that shows a mixing of Australian and Oriental faunas. Geologically the island of Sulawesi is thought to represent land that has originated both from the Oriental and Australian plates, though this is not reflected in the fauna which is virtually all Oriental in Origin. As well as this, the island also shows a high level of endemicity for some groups, such as mammals, birds and butterflies, while others are depauperate or are as yet poorly known. The latter is certainly the case for most orders of insects, but this will certainly change in the near future.

Running for a full twelve months and ending on 31 December 1985, Project Wallace saw insect collecting on a scale never seen before. One could venture hundreds of metres into the forest and be in sight of at least one type of collecting device at nearly all times, whether they were pan, malaise, pit-fall, baited, interception, or aerial malaise traps, fogging machines, or people sweeping, running light traps, or just searching the vegetation, litter and tree trunks for those highly sought after specimens. This intensive collecting was made possible by a tremendous feat of organization and logistic support that allowed for easy collecting in this very remote and, at times, inhospitable locality.

The organisation for the project was provided by its Director, Dr. Bill Knight of the British Museum (Natural History). His efforts, with the assistance of the Royal Entomological Society and Ministry of Defense in laying down the ground-plan for scientific work, negotiating with the Indonesian Government and Indonesian Institute for Science, and organising transport of equipment and personnel, insured the success of the project. An integral part of the project was the logistic and field support provided by

three groups from the British Armed Services. Each group of about 20 service people spent four months in Sulawesi, providing cooking facilities, medical support, ground transport, surveying and mapping of the area, a base camp with laboratory, workshop, sleeping quarters and even a volley ball court. They cut trails measuring many kilometers into the forest in several directions reaching points from 200 up to 1700 metres ASL. They built more than five major sub-camps at various altitudes, which were continually supplied with food, fuel and any special equipment needed for collecting. It was possible if you were unsure of your ability in the forest to be guided by a service person who helped carry your gear and often cooked and tended camp while you maximised your collecting time.

Of the 20 days I spent at Project Wallace, 8 nights were spent away from base camp at several of the sub-camps up to an altitude of 1100 metres. The forest between base camp at approximately 200 metres and the highest point I reached was fairly uniform, comprising a somewhat open forest canopy which made for a well-developed understory. Collecting along the edge of the forest in semi-disturbed vegetation and on hill tops that were often in cloud was particularly productive. Initial assessment of malaise and pan trap catches in these locations indicate a high diversity of parasitic Hymenoptera.

At any one time there were up to 20 scientists (called "wallies" by the service people) in base camp, undertaking projects in the rainforest diversity programme, or the agricultural or medical projects that were under way. Most workers were there to collect in the rainforest and collect they did. The amount of material that is now being processed must be phenomenal, as there were at least six to ten malaise traps in the field at all times for the whole year and dozens of pan traps and other collecting devices.

This much material will undoubtedly keep many workers busy for several years to come and will surely provide a detailed insight into the insect fauna of a previously little collected island. The ramifications of this material to our knowledge of faunal relationships in the Indo-Australian Region are likely to be great but will probably not emerge for several years yet. In all, Project Wallace was an unforgettable entomological experience that has left its mark indelibly on those that took part. Hymenopterists that I know of that went on Project Wallace other than myself are R. R. Askew (University of Manchester), J. Noyes and G. R. Else (both of the British Museum), and C. van Achterberg (Leiden).

For information on more detailed aspects of Project Wallace see New Scientist, 3 January 1985, No. 1437, pp. 12-15 and 28 March 1985, No. 1449, pp. 22-23, and progress reports that appeared in the four parts of vol. 9 of Antenna (Bull. Roy. Entomol. Soc.). Also interesting reading is Alfred Wallace's book "The Malay Archipelago" (1962, Dover Publ., N. Y.).



Improving the Fiber Optic Illuminator

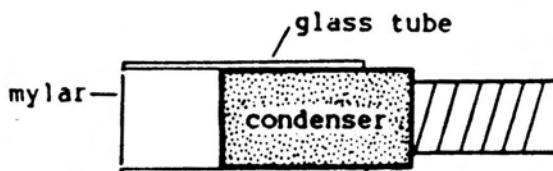
by Dave Wahl

The search for adequate specimen illumination has always plagued entomologists. Although throwing a powerful light source on a specimen is relatively easy, the entomologist is cursed with burning fingers and/or blinded by cuticular reflections of a bright point source of illumination. Until recently, the best illumination was provided by lamps utilizing a short-focus parabolic reflector. Fiber optic illuminators provide a cool light source but the problem of unwanted reflections remains. A major step toward solving this problem was the discovery by Henri Goulet that plastic drawing

film (such as opaque Mylar film), when placed between light source and specimen, provided a cheap and effective means of providing a soft and uniform illumination. A drawback to this technique is that the standard mode of usage entails affixing the drawing film to a base (such as a lump of plasticene) and moving it about on the microscope stage. This gets in the way and is annoying. I have recently hit upon a method of combining drawing film with fiber optics in a manner that is both cheap and space efficient.

The standard fiber optic illuminator comes equipped with a small removable condensing lens on the end of each light pipe. My method is to find a piece of glass tubing slightly larger in diameter than the condensing lens unit. I cut off a section that is roughly 3-4 cm long. A circle of drawing film equal in diameter to the glass tube is prepared and glued to one end of the tube (I use Super Glue or the equivalent). This assemblage can then be slipped over the condensing lens and, once adjusted, taped securely into place. The final distance of the drawing film relative to the condensing lens will depend on one's taste regarding proximity to the specimen and degree of desired specimen illumination.

The result of this installation is a soft and uniform illumination, and the need for pushing around a screen of drawing film is eliminated. The difference between this style of illumination and that provided by standard lamps must truly be seen to be believed, especially with regard to surface sculpture.



(The following article appeared in a recent issue of Chalcid Forum and is reprinted here with the editors' permission.)

Platygasteridae or Platygastridae, Miscogasterinae or Miscogastrinae?

• by Z. Boucek

For more than 100 years the family-group name Platygasterini, Platygasterinae or Platygasteridae was used and then Kozlov (1970. Ent. Obozr. 49:219, footnote) changed it to Platygastridae, claiming that (translation from Ent. Rev. 49:123) "The spelling Platygasteridae adopted previously by all authors is incorrect, since the genitive case of gaster is gastros." That means that all those authors who actually wrote or even spoke Latin in the past committed a mistake. Or did they?

When going through Stearn's Botanical Latin, I found on p. 78: "Gaster (f.; gen. sing. gasteris or gastri ...)", which confirmed what I vaguely remembered from my learning of the Latin language, namely that some nouns have variation in declension and that gaster is one such noun, perhaps because it came into Latin from Greek. It is also proved by usage, e.g. in 'Gasteromycetes', 'gasteropod' (although more common is 'gastropod'), apart from insects. In our case it means that Kozlov was not right to call the spelling '-gasteridae' wrong and because that spelling was established by a long-term usage, it should be regarded as the valid spelling. The Greek word gaster was accepted into Latin without change (also as to the feminine gender)

and Latin is the language of our scientific names according to the Code (Art. 11b), not Greek. Apparently this is where Kozlov was mislead.

The case has some impact also on some other family-group names in Chalcidoidea (and Braconidae) and from the above I learned that there is no need to change Miscogasterini to Miscogastrini, Sphegigasterini to Sphegastrini, etc., as well as no need to change the established braconid name Microgasterinae to Microgastrinae. In each individual case the established usage should decide the valid spelling, because both variations are correct.

Stearn, W. T. 1973. Botanical Botany. History, Grammer, Syntax, Terminology and Vocabulary. 2nd. ed. David & Charles, Newton Abbot, U.K., 566 pp.

Editor's note: I understand that in a future issue of Chalcid Forum there will be a rebuttal to this issue by George Steyskal and a rebuttal to the rebuttal by Boucek. Stay tuned for the latest in this never-ending (and seemingly trivial to some of us) saga!

RESEARCH NOTES

The following notes are taken from those who responded in the latest questionnaire. In most cases the information is rather brief and not as detailed as we would like to see. Hopefully some of you will respond in the future with longer and more extensive reports about your research progress (or lack of it!).

van ACHTERBERG, Cornelius. Kees recently spent six weeks in Sulawesi, part of the time in North Sulawesi on Project Wallace and the rest of the time in Lore-Lindu National Park and Tangboleo-Dua Sandara Nature Reserve (spelling may not be correct - you must improve your handwriting, Kees!). The trip was reasonably successful but the Project Wallace base camp was in a less interesting area for Braconidae. His revisions of the Blacinae and the European Aleiodes and Phanerotomini should be completed this year. In March he made a collecting trip to southern Spain with some graduate students and later this year plans to sort the Haliday Collection in the Dublin Museum. He also states that the Teunissen Collection of Ichneumonidae is currently being rearranged.

AGARWALA, Basant Kumar. "Parasitoid associations of predominantly endemic aphids of Greenideinae and Hormaphidinae in this region (India) was neglected until 1978 when a rather sustained effort in exploring the aphidiids was initiated at a preliminary level. So far results obtained have been very encouraging - four new species of Trioxyx and two new species of Praon have been described. Trioxyx indicus, a polyphagous species parasitizing distantly related aphid species, has been found to be better adapted to aphids inhabiting weed hosts than in the seasonal infestation of aphids on crop plants. This clue can be considered significant in view of the parasite's persistent association with Aphis craccivora on bean crops. Visited the laboratory of P. Stary, Czechoslovak Academy of Sciences (Sept. 1984), and examined Oriental, Indian in particular, collections of Aphidiidae. This laboratory has a very authoritative and extensive collection of the region."

AUBERT, Jacques F. "Je termine actuellement l'étude des Ichneumonidae Scolobatinae de Suède, du British Museum et du Musée de Léningrad."

AUSTIN, Andrew D. Andy is nearing completion of a revision of the Braconidae that attack Limacodidae (Lepidoptera) in the Oriental Region, particularly those associated with coconut and oil palm. His next projects involve a study of the Apanteles (s. str.) spp. parasitising Diatraea and related Lepidoptera genera associated with sugar cane in Central America, and a study of the genus Parabaeus (Platygastridae) with Lobo Masner.

BARRON, John R. John reports that he is presently working on revisions of the ichneumonid genera Rhorus and Homaspis in the Nearctic Region, and is describing two new species of Gelis parasitic on spiders.

BECKAGE, Nancy E. Nancy's primary interest concerns physiological interactions between endoparasitic insects and their hosts. She and her colleagues are currently studying endocrine host-parasite interactions and the induction of parasitism-specific polypeptides in lepidopterans parasitized by braconid and ichneumonid wasps. She reports: "We have determined that parasitism by Cotesia congregata inhibits ecdysone 20-monoxygenase activity in host tobacco hornworm larvae during the period when the wasps are emerging from their host. This suggests that the pheromone ecdysone is likely not converted to the active form of the molting hormone 20-hydroxyecdysone, and may be one factor contributing to the induction of developmental arrest of the host. We have also been studying effects of parasitism on hemolymph polypeptides in the host in collaboration with Don Stoltz at Dalhousie University. Both newly parasitized and terminal stage host larvae with mature parasites have characteristic polypeptides present in their hemolymph that are not detectable in unparasitized larvae of the same age. The virus injected by the wasp female appears to induce synthesis of the early stage parasitism-specific polypeptide and synthesis is inhibited by treatment of crude preparations of calyx fluid containing the virus with psoralen and long-wave UV to inactivate the virus."

BERTA de FERNANDEZ, Carolina D. "Continuo trabajando com los Cremnops neotropicales. He recibido material de dos Museos: National Museum of Washington y Comparative Zoology, Harvard University, Cambridge. Me encuentro con que dispongo de muy poco material para poder establecer limites entre las especies y lograr una revisi on mas completa y de gran aporte para el conocimiento de éste géenero en la reg. neotropicale. Existe el ofrecimiento de material de parte de investigadores e instituciones, a quienes iré pidiendo, a medida que vaya estudiando los que dispongo."

CETKOVIC, Aleksander S. Alek is a new graduate student who plans to study the taxonomy and biogeography of a group of Ichneumonidae in Yugoslavia or the Balcan peninsula, with special reference to the agricultural and/or forestry species.

CHAO, Hsiu-fu. Although Prof. Chao has not published on the parasitic Hymenoptera recently, he is guiding the research of graduate students studying the Chinese ichneumonid genera Enicospilus and Xanthipimpla.

CHEN, Jia Hua. Jia Hua spent 2 years (1983-84) in Washington with Paul Marsh studying Braconidae and Aphidiidae followed by several months at the University of California, Riverside before returning to China in 1985. While in Washington he prepared a study of the genus Ephedrus from China. He plans to continue his studies of the Chinese Braconidae in general and Aphidiidae in particular.

CHEN, Xuexin. Studies on the Chinese species of the genus Rogas will occupy Xuexin's time as a graduate student in Hangzhou.

CHOU, Liang-yih. The taxonomy of Aphidiidae and Braconidae from Taiwan are the interests of Liang-yih. At present, he is studying the genus Streblocera and other small genera of Euphorinae.

COSTA, Arminda B. C. Arminda is studying the Aphidiidae fauna of Portugal and so far reports the addition of 7 species new to this area.

DANG, Xinde. Xinde and his colleagues are preparing a monograph on the parasitic wasps of forest pests of China. The monograph will include about 350 species of Ichneumonoidea, Chalcidoidea, Proctotrupoidea, and Bethyloidea.

DEYRUP, Mark. Mark reports that he has begun a survey of braconid parasitoids of scolytid beetles in collaboration with Scott Shaw. This survey is, in part, intended to generate interest (and specimens) among coleopterists by making reared parasitoids easier to identify.

DONALDSON, John S. John is busy with a revision of the afrotropical braconid genus Physaraia.

FINLAYSON, Thelma. Characteristics of final-instar larvae of the various tribes and genera of the Aphidiidae are being described and illustrated and keys for their separation are being devised. ICHNEWS congratulates Thelma for being awarded Honorary Life Membership in the Entomological Society of Canada and in the Professional Pest Management Association of British Columbia.

FISCHER, Maximilian. Max reports that his research progress was slow during the past several years because of his duties as Director of the Department of Entomology at the Vienna Natural History Museum and because of construction work in the department. In spite of this, he has been working on the Opiinae part of the Hymenopterorum Catalogus and expects the manuscript to be ready by the end of this year.

GÄRDENFORS, Ulf. After completing his Ph.D. thesis during February, Ulf has now begun a study of the aphidiid genera Paesia and Monoctonus for Europe.

GAULD, Ian D. Presently involved in a study of the Ophioninae of Mesoamerica and a taxonomic/ecological study of the parasitoid fauna of Costa Rica.

GLAVENDEKIC, Milka. Milka is beginning his studies for a Master of Science degree and will be investigating the complex of parasitoids on oak defoliators in the Lepidoptera families Noctuidae and Geometridae.

GOKHMAN, Vladimir Y. Preparing a key for the identification of Phaeogenini of the Soviet Far East.

GUPTA, Santosh. Assisting and collaborating with her husband, Virendra, in a faunistic survey of the Ichneumonidae of Florida. It is contemplated that monographic works will be published on this subject in the near future.

GUPTA, Virendra. In addition to the survey of the Ichneumonidae being done with his wife, Santosh, Virendra is working on a revision of the catalog of Indo-australian Ichneumonidae, volume 1 of the Fauna of India which covers the Ichneumonidae, and a revision of the world species of Microcharops.

HAESELBARTH, Erasmus. Erasmus is in the midst of several studies in the Braconidae: revisions of the genera Perilitus, Microctonus, Syntretus and closely related ones such as Falcosyntretus and Townesilitus; a revision of the genus Ichneutes; studies on host-parasite relations in pine forests and on wheat, particularly the parasites of Oulema lichenis. He also is involved in the coordination of the identification service for entomophagous insects of the West Palaearctic Regional Section of IOBC.

HE, Junhua. Current projects include: Ichneumonidae and Braconidae parts of the "Economic Insect Fauna of China"; a study of parasites of the pine caterpillar Dendrolimus spp. in China; a study of five new species of the genus Dyspetes; a study of a new species of Millironia; and work on the taxonomy of the genus Rogas in China.

HINZ, Rolf. Rolf is presently involved in breeding Ichneumonid species for examination of their life histories and in the preparation of a table for the identification of Dusona species of the Palaearctic Region.

HORSTMANN, Klaus. After visiting several museums in Europe, Klaus is preparing revisions of the type species described by Hartig, Pfankuch, Clement, Brauns, Fahringer, Rudow and others. He is also revising the Palaearctic species of some genera or species-groups of Campopleginae (Eriborus, Diadegma, Campoplex, Tranosema, Phaedroctonus) and Cryptinae (Latibulus, Gelis, Phygadeuon and others).

HUDDLESTON, Tom. At present Tom is preparing revisions of the Palaearctic species of the genus Chelonus and the Australian and New Zealand species of Ascogaster.

HUMBLE, Leland M. Lee has recently begun to catalogue the holdings of the forest insect collection (6500 specimens) at the Pacific Forestry Centre (British Columbia). Identified holdings in the Ichneumonidae are relatively small: Braconidae, 100 spp., 1400 specimens; Ichneumonidae, 210 spp., 2200 specimens. An additional 900 specimens in the Braconidae and 600 in the Ichneumonidae are sorted to the generic level. The majority of the specimens are associated with forest pests of British Columbia. A complete listing of holdings will be available in the future. Current projects include studies on the biology and parasitoids of Ips perturbatus, Actebia fennica and Zeiraphera improbana.

IZQUIEDRO MOYA, Isabel. At present she has a project on a revision of the genus Netelia for Spain, including related genera.

JOHNSON, James W. Jim reports that his revision of the North American species of the genus Praon is in press. He is also continuing to study the world species of Praon and will soon start studies of the genus Aphidius and related Aphidiidae.

KAUR, Raminder. "Our museum at Dehra Dun houses the Ichneumonid collections from the State of Uttar Pradesh (India). The collections are from the Terai region in the east and Himalayan region in the west. Most of the collections are from Dehra Dun district where I am stationed at present. The pinned Ichneumonidae are referable to 55 genera of 12 subfamilies and 92 examples of Braconidae. Of the former, wherever authentically possible, species have been identified. The Netelia fauna of Brunei is being studied and revisionary studies on three Palaearctic genera, Aconias, Litochila and Dentimachus, are in progress."

LANFRANCO LEVERTON, Dolly M. Dolly reports that she is finishing a study of the magellanic species of the Phygadeuontinae-Hemitelini and Oxytorinae occurring in Nothofagus forests and bog communities. She has done extensive collecting in native forests in Valdivia Region of Chile and visited all the chilean insect collections searching for Ichneumonidae for her studies during 1985.

LUHMAN, John C. He is now preparing the final version of his Ph.D. thesis, a revision of Nearctic Endasys (Ichneumonidae, Gelinae), which will include at least 77 species, 65 of which are new to science. Also in press is a revision of the 4 Nearctic species of Glypticnemis. "Because of the length of the Endasys revision, it will be about 2-1/2 years before it can be published because it will be through the University of California Press which is free to graduate students with dissertations to publish, and we have no funds for publishing. Questions and identifications of Endasys until then can be sent to me for tentative identification."

MAETO, Kaoru. Revisions of the Japanese species of the Microgastrinae and Doryctinae have just begun as well as a revised key to the braconid genera of Japan. He is also working on the taxonomy and biology of the parasitoids of various forest pests. He is preparing a paper on the Japanese species of the Meteorini (Meteorus and Zele) and a paper on the male internal reproductive organs of the Braconidae.

MARSH, Paul M. The key to genera of Braconidae for North America is nearing completion (co-authored with Scott Shaw and Bob Wharton). When finished, the key will cover 232 genera and be about 289 couplets! It will also include scanning electron micrographs of nearly all morphological distinguishing characters and illustrations of the wing venation for each genus. The key is aimed at the non-specialist and will be of great help to biological control workers. Once the key is out of the way (and this newsletter!) plans are to concentrate on the genus Heterospilus for the New World. This will involve about 200 species for North America and possibly 300 or more for South America. Needless to say, this will take some time.

MASON, Bill. Bill has been working for several years on a phylogeny and reclassification of the entire Hymenoptera which is nearing completion. He spent last December and January on a collecting trip in South Africa, mostly in the Eastern Transvaal and Eastern Cape Province areas. Bill is planning to retire in October 1986, but expects to continue research in association with the Biosystematics Research Institute in Ottawa during the summer months and to be associated with the American Entomological Institute in Gainesville, Florida in winter.

NAKANISHI, Akinori. Recently completed a short paper on the genus Promethes from Japan.

OEHLKE, H.H. Joachim. "Vorerst Bearbeitung einzelner Gruppen und Gattungen der Pimplinae. Für Katalog der westpal. Ichneumonidae sind z.Zt. 8,000 Arten und Synonyma (incl. bis Schmiedeknecht) auf Karteikarten erfasst. Mir obliegt die Förderung der Hymenopterologie in der DDR (Leitung des Arbeitskreises Hymenoptera und der Rundschreiben). Deshalb auch faunistische Arbeiten für Raum DDR bes. aculeate Hym. Auch sind Bearbeitungen von Exkursionsausbeuten aus sozial. Ländern (z.B. UdSSR, Bulgarien, Rumänien, Ungarn) geplant."

PAPP, Jeno. Jeno is continuing his studies of the taxonomy/systematics as well as faunistics/zooogeography of the Braconidae of Hungary and the Carpathian Basin for the series Fauna Hungariae. Also working on the Braconidae of Korea, Mongolia and the Mediterranean subregion, and the Microgastrinae and Bracon species of the Palaearctic Region.

PENTEADO-DIAS, Angelica Maria. "I have conducted research on the taxonomy and biology of the Neotropical Braconidae. I'm most interested in examining Alysiinae, Microgastrinae, Opiinae and Cheloninae. I have very little references about the Cheloninae and I would be happy to receive articles with systematic keys for this subfamily."

POLGAR, Laszlo. Studying the practical utilization of an aphid parasite, Aphidius matricariae, in glasshouses. The main problems are side effects of pesticides, cold storage of aphid mummies, and invasion of hyperparasites.

PORTER, Charles, C. At the moment, Charles is trying to elaborate a key to the South American genera of the Trachysphyrus group. Apparently, numerous undescribed genera must be diagnosed. In many instances, generic discrimination is straightforward, but, more often, one is faced with the alternative of establishing an excessive number of monotypic genera or of trying to define larger but perplexing polythetic assemblages. Sad to say, "traditional" characters which allow fairly sharp discrimination of trachysphyroid genera in the Holarctic (or even Australia), break down in South America where a vast array of intermediates exist. On the bright side, he is getting a good series of excellent SEM photos and some wonderful inked drawings by a truly talented illustrator to accompany the work in progress. Over the past several years, Charles had done extensive collecting in Greece, New Mexico, Chile, Florida, Portugal, Texas and Arizona and plans to be in California, Arizona and New Mexico again this June. He also hopes to try Malaise traps in the canopy of the temperate deciduous forest at Fordahm's Ecology Field Station in Westchester (Armonk).

QUICKE, Donald L. J. Don reports that he has completed a fully illustrated key to the 123 Old World genera of Braconinae known to date and expects it to be published in 1986. As well as discovering a number of new genera in 1985 and a new subfamily near the Braconinae/Ypsistocerinae, he has been conducting phylogenetic analyses of the genera of Braconinae, employing many new characters including male genitalia. He has been using with considerable success the scanning electron microscope to examine and illustrate male genitalia.

RASNITSYN, Alexandr P. Has been working on a description of the earliest (early Cretaceous) Braconidae from Transbaicalia with Mike Sharkey, and an outline of the phylogeny of the Hymenoptera for Oriental Insects.

REY del CASTILLO, Carmen. She has recently begun studies of the Evanidae and Gasteruptiidae. Also has begun the study of several genera of Ichneumonidae (Dusona, Collyria, etc.) as part of a systematic study of the Banchinae of Spain for her Ph.D thesis.

ROSEN, David. "One of my graduate students, Efraim Mescheloff, has recently completed his Ph.D thesis entitled 'Biosystematic studies of the Aphidiidae of Israel'. We are now preparing a series of 5 joint papers, including records of the species occurring in Israel, descriptions of several new species, etc."

van ROSSEM, Gerard. Presently working on a revision of the Western Palaearctic Oxytorinae genera.

ROTHERAY, Graham E. Graham reports on his ecological studies of the Diplazontinae: "Many diplazontine species have restricted host ranges as indicated by host choice tests and field rearings. However, a recent discovery is that under circumstances of host deprivation, females accept a wider range, including species that are normally rejected. However, parasitoid survival is limited in such hosts by encapsulation and physiological incompatability. In the field, host densities very widely, making it probable that deprivation occurs regularly. These factors complicate analysis of host relations and such factors may account for many rearing records in the literature. Host relations are dynamic in the family of parasitoids, not static." Graham is also preparing a Royal Entomological Society Handbook to the identification of the British diplazontine fauna, co-authored with Michael Boston.

SANBORNE, Paul M. Mike reports that he has completed revisions of the world species of Sinophorus and has in press a revision of the Nearctic species of Xylophylax (=Rhimphoctona), Cymodusa, Gymodusopsis, and a supplementary paper on Sinophorus. He is currently developing a new key for the identification of the subfamilies of Ichneumonidae occuring in North America. This key makes use of newly discovered characters and will be extensively illustrated using scanning electron micrographs. Target users are forestry and agricultural workers, students, and curators having little or no experience with Ichneumonidae. Mike has recently tested entirely yellow (zinc chromium) malaise traps in South Africa (Townes design but 25% smaller with much denser material). In general, the catches of all groups of Hymenoptera were double that of entirely black traps; more testing is required but it looks very, very promising. (Mike has recently accepted a position on the staff of MacDonald College, McGill University, Ste. Anne de Bellevue, Quebec.)

SARAZIN, Michael. Aside from his general duties in the Hymenoptera Section and coordinator of their 2nd Hymenoptera wrokshop, Mike is working on several research projects: a world list of the braconid subfamily Agathidinae with Mike Sharkey, and lists of the primary types of Proctotrupoidea and Chalcidoidea in the Canadian National Collection.

SHARKEY, Michael J. Mike has nearly completed a revision of the large New World genus of Agathidinae, Alabagrus, with 106 species. It will be going out for review soon and "it is a relief to see it at this stage." Several small projects are in press or near completion: a paper with Bill Mason on Aenigmatostomas and Asiocardiochiles, two species of braconids with very long mouthparts; an illustrated key to the hymenopterous parasites of pests of sunflower (Helianthus spp.); a description of a new species of Agathis from Oregon for J. W. Thompson who has done extensive research on the biology of the species; a paper discussing the phylogenetic placement of the genus Mesocoelus ("I believe it is an Agathidine"); nearing completion of a revision

of Zacremnops but needs to see more specimens before finishing the project which involves 5 species, quite a bit fewer than expected. Mike will be co-authoring a paper with Gary Buckingham on "tergal glands" of male Braconidae. The various states of these glands will be described and the distribution of these states will be discussed in a phylogenetic framework. Mike states that similar if not homologous glands are also found in some Ichneumonidae, i.e. Megarhyssa. With Alexandr Rasnitsyn will describe the earliest known fossils of the Braconidae. On a larger scale, he has begun a generic revision of the Agathidinae world-wide. Mike would like to see as many exotic specimens as possible and invites curators to send their collections of Agathidinae which he will be happy to determine to genus and return quickly. Along with the generic revision, he and Mike Sarazin are compiling a catalog of the world species of Agathidinae. This will update Shenefelt's 1972 catalog and incorporate new ideas on agathidine classification.

SHAW, Mark R. Currently Mark is working on the N.W. European Aleiodes s. lat. (with Kees van Achterberg), the European parasites of spiders and their eggs (with Mike Fitton), and the British Pimplinae (with Mike Fitton and Ian Gauld). More passively (at present) he is working on the British Rogadinae as a whole, and host associations of Diadegma and other campoplegine genera attacking microlepidoptera (with Klaus Horstmann).

SHAW, Scott R. Scott is currently working on a study of the systematics, phylogeny, and biogeography of the austral family Megalyridae. He asked to report this in ICHNEWS because "there is no megalyrid newsletter." He offers the following "attempt" at a limerick:

MEGALYRICS

Megalyra, a wasp from Down Under:
 Her lyre is an object of wonder!
 Her sting is so long,
 It is worthy of song.
 But if I carry this further, I'll blunder.

Editor's note: In the last issue of ICHNEWS we reported the serious illness of the Shaw's infant son, Bobby. Sadly, I must report that Bobby died last year. All of us extend to Scott and Marilyn our sincere sympathy. On a happy note, they are expecting another child this August!

SHEEHAN, William. Although not working in systematics, Bill offers this note. "I am using an electroantennogram detector (EAD) to determine what components of crucifer volatiles Diaeretiella rapae (Aphidiidae) responds to. I am also flying the wasps to odors in a wind tunnel to test conditioning and also doing field experiments on habitat location."

STARY, Petr. Petr is conducting research on the biological control of aphids by parasitoids in Burundi in cooperation with G. Remaudiere (Paris) and A. Autrique (Burundi). They are "ready to suggest parallel information to colleagues from Africa south of the Sahara."

TANG, Yu-qing. Preparing his thesis on the taxonomy of Chinese Enicospilus, and perhaps expanding it to include the Chinese Ophoninae.

THIRION, Camille. Reports that she is studying the systematics of various groups of Ichneumonidae (Ichneumoninae, Diplazoninae, Ophoninae, Metopiinae, and Banchinae), Gasteruptionidae and Evanidae for Belgium and surrounding areas. She is also interested in the ecology of forest Ichneumonidae.

TOWNES, Henry. Henry spent much of the last two years moving into new quarters in Gainesville, Florida (see notes under COLLECTIONS). Unfortunately, he also underwent a very serious operation late last year and, as of this writing, is recovering nicely. He certainly would like to here from many of you.

WAHL, David B. Having completed a revision of the Nearctic Venturia, Dave started on a Smithsonian Postdoctoral Fellowship (August 1985 to August 1986). He is studying the larvae of Porizontinae with the goal of elucidating relationships of the genera and finding out what are natural groups. Results of this study will be integral with adult characters. In addition to re-examining J.R.T. Short's material, many previously unknown species have been mounted for study. Smaller projects include a review of the porizontine genus Benjaminia and an examination of the larvae of Banchinae. This fall Dave will start a two year NSF posdoctoral fellowship with Henry Townes in Gainesville, Florida working on a revision of the genera of Phaeogenini.

WANG, Shu-fang. Has studied about 20 genera of Chinese Ichneumonidae and plans to continue these systematic studies as well as work on the biological control of injurious insects in Chinses forests.

WHARTON, Robert A. Bob reports that a portion of his revision of the braconid genus Alysia is completed. He is continuing to study braconids associated with biological control programs on graminaceous stalk borers, leaf-mining Diptera, and tephritids. "A new species seems to turn up every year - there are simply too many opiines, but I'm carrying on regardless!"

WHITFIELD, James B. Jim is well along on his revision of the braconid Bucculatriplex/Polystenidea complex, including about 25 species, 21 of which are new, in the New World. Other projects in progress include: a review of the genera of Braconidae that attack leaf-mining Lepidoptera in the Holarctic Region, including keys and discussions of biology; a tentative synonymy of Pseudavga Tobias under Cantharoctonus Viereck with a discussion of the included species; a paper on the patterns of host ranges in Pholetesor. He hopes later this year to start revising Adelius and Paradelius and attempting some sleeving experiments with several Pholetesor species ("transplanting" to new hosts, breeding, etc.). While he has been in England, Jim has taken the opportunity to collect in England and Scotland and hopes to get to Spain this summer.

WILLIAMS, Daryl J. M. Daryl's M.Sc. thesis should be completed by March and progress will be underway toward publishing the results. The thesis is a revision of the microgastrine genus Sathon. Also he is currently working on a manuscript concerning the genus Pseudognaptodon.

REQUESTS FOR RESEARCH LOANS AND OFFERS TO EXCHANGE SPECIMENS

van ACHTERBERG - Research: interested in braconids from Sulawesi, Palaearctic Aleiodes and Phanerotomini. Exchange: Braconidae, especially genera absent from the European region.

AGARWALA - Research and exchnage: latest information on Aphidiidae of the Oriental Region except India and collections of aphidiids from the aphid subfamilies Greenideinae and Hormaphidinae.

AUBERT - Research: "Je ne recherche pas de matériel car j'en reçois déjà beaucoup trop des laboratoires."

BARRON - Research: specimens from the ichneumonid tribe Ctenopelmatini.

BECKAGE - Research: living specimens of Hyposoter exiguae are desired to continue studies of development in the tobacco hornworm.

BERTA de FERNANDEZ - Research: "No cuento de colección particular. El material para investigación que se necesite se debe solicitar a través de mi nombre a la Fundación Miguel Lillo o directamente a la Institución." Exchange: "Para el intercambio de material depende de la abundancia del grupo a cangear, disponible en colección. Queda abierta toda posibilidad de intercambio de material con personas interesadas, pudiendo convenir las condiciones de cambio, con ellas en el momento solicitado."

BRAJKOVIC - Research: publications on Braconidae. Exchange: Braconidae of Yugoslavia to exchange for Braconidae from other countries.

CAPEK - Research: Bred cocoons of identified braconid species.

CHAO - Exchange: publications on parasitic Hymenoptera.

CHEN (Jia Hua) - Research and Exchange: publications and specimens of Aphidiidae and Braconidae.

DANG - Research: publications on Braconidae.

DONALDSON - Exchange: identified specimens of Braconidae and/or Ichneumonidae.

GÄRDENFORS - Research: Paeusia and Monoctonus (Aphidiidae), preferably reared material.

GAULD - Research: Ophioninae from southern Mexico, Guatemala, Honduras, Belize, El Salvador, Nicaragua, Costa Rica, Panama, or Cuba. Exchange: "Is anyone interested in material from northern Costa Rica? I have 12 malaise traps sampling for one year and will give material in exchange for information about it. I require numbers of species/genera, etc., in samples and I would like a duplicate set of determined material for the British Museum."

GOKHMAN - Research and Exchange: Palaearctic Phaeogenini (Ichneumonidae).

HAESSELBARTH - Research and Exchange: specimens of the braconid genera Perilitus, Microctonus, Syntretus, Falcosyntretus, Towneslitus, Ichneutes, and parasites of Oulema lichenis.

HINZ - Research: determined specimens of Dusona, particularly from the eastern and southern parts of the Palaearctic Region.

HUDDLESTON - Research: specimens of braconid subfamily Cheloninae, old world Meteorus (particularly African or Oriental), and Rogadinae.

IZQUIERDO MOYA - Research - Palaearctic material of the ichneumonid subfamily Acaenitinae and the genera Collyria and Netelia.

KAUR - Research: specimens of the ichneumonid genera Aconias, Letochila, and Dentimachus.

KOLAROV - Research: "Any material from Bulgaria, European Xylophrurus."

LANFRANCO LEVERTON - Research: Chilean specimens (or information) of the ichneumonid subfamilies Labeninae, Phygadeuontinae (Hemitelini), Anomaloninae, Oxytorinae, Pimplinae and Metopiinae.

LUHMAN - Research: Neotropical specimens of the ichneumonid genera Amphibulus and Glypticnemis.

MITCHELL - Research: specimens of the ichneumonid genus Trogus from the southwestern U.S., Rocky Mountain states, and the Pacific Northwest.

Exchange: "I have a very good collection of Ichneumonidae, about 80-90% from Maryland, USA."

NAROLSKY - Research and Exchange: specimens of the ichneumonid subfamily Cremastinae.

OEHLKE - Research and Exchange: specimens of the ichneumonid subfamilies Pimplinae, Acaenitinae and Xoridinae from the western Palaearctic.

PAPP - Research: Braconidae from Hungary, Korea, Mongolia and Mediterranean subregion; microgastrinae and Bracon from the Palaearctic Region. Exchange: braconids in general; "...my material is mainly from Hungary and Temporate Asia (Korea and Mongolia)."

PENTEADO-DIAS - Exchange: Braconidae from the Neotropical Region.

POLGAR - Exchange: living Aphidius matricariae biotypes.

PORTER - Research: ichneumonid genera Trachysphyrus, Chromocryptus, Dotocryptus, Lanugo, Reptatrix, Buathra, Meringopus, Itamoplex and related genera from any part of the world. Exchange: identified U.S. and South American ichneumonids (and other Hymenoptera) for mesostenines, ephialtines, xoridines, and labiines from Australia, the Orient, Ethiopian Region, and Mediterranean Europe.

QUICKE - Research: specimens of the braconid subfamily Braconinae, particularly from the West Afrotropical Region and from the Indo-Australian Region; information on hosts, or reared material is extremely useful. Exchange: "Always willing to identify Old World Braconinae to generic level in exchange for spare material."

REY del CASTILLO - Research: material of the ichneumonid subfamily Banchinae from Spain.

ROTHERAY - Research: European material of the ichneumonid subfamily Diplazoninae, particularly reared specimens.

SANBORNE - Exchange: "Will exchange on a specimen-for-specimen basis any Nearctic Ichneumonidae for Campopleginae on a world basis."

SCARAMOZZINO - Research: specimens of the ichneumonid genus Hellwigiella; male (and female) of the following Enicospilus species to make slides for study of the genitalia - cerebrator, combustus, macroccator, opacitor, and hebraicator. "I also need information about aerial Malaise trap (material and construction plans)."

SCHNEE - Research and Exchange: specimens of the ichneumonid subfamily Anomaloninae.

SHARKEY - Research: specimens of the new world braconid genus Zacremnops (see Sharkey and Wharton 1985 for diagnosis); willing to sort to genus any collections of Agathidinae other than specimens from Western Europe, Canada, and U.S.A. Exchange: Braconidae determined to species (especially Agathidinae, Microgastrinae) for the same; malaise trap residues from southeastern Canada for similar residues from other areas of the world.

SHAW (M. R.) - Research: reared Rogadinae (Braconidae) from Europe; Ichneumonidae reared from spiders or their eggs in Europe; any reared parasitic Hymenoptera that anyone is prepared to donate.

SHAW (S. R.) - Research: Megalyrid specimens from any location. Exchange: North American Hymenoptera for megalyrids from any location.

STARY - Research and Exchange: Aphidiidae from the world, but particularly the Ethiopian and Neotropical Regions and Far East Asia.

TANG - Research: specimen of Chinese Ophioninae. Exchange: publications on parasitic Hymenoptera.

THIRION - Research and Exchange: specimens of the ichneumonid subfamilies Ichneumoninae, Diplazoninae, Ophioninae, Metopiinae and Banchinae, and Gasteruptionidae and Evanidae.

TOBIAS - Research: types of the braconid subfamily Cheloninae. Exchange: correctly determined Cheloninae species of the world.

TOLKANITZ - Research and Exchange: specimens of the ichneumonid subfamilies Tryphoninae and Metopiinae?

WAHL - Research: loans of any reared porizontines with associated larval remains from the Old World and the Neotropics; loans of Benjaminia specimens.

WALTER - Exchange: identified Ichneumonidae for Ichneumoninae.

WANG - Research and Exchange: Ichneumonidae important in agriculture and forestry biological control.

WHARTON - Exchange: braconid subfamilies Opiinae, Exothecinae, and Hormiinae.

WHITEFIELD - Research: new world braconid genera Polystenidea, Bucculatriplex, Adelius, and Paradelius. Exchange: any odd or unusual undetermined Rogadinae, especially from the Neotropics, for Rogadinae, Exothecinae and Microgastrinae.

WILLIAMS - Research: specimens of the braconid genus Pseudognaptodon, especially from the West Indies.

COLLECTIONS

American Entomological Institute

After spending 20 years in the frigid climate of Ann Arbor, Michigan, Henry and Marjorie Townes have moved themselves and the entire collection of the American Entomological Institute to warm Gainesville, Florida. Their new address is 3005 SW 56th Avenue, Gainesville, Florida 32608. There are two buildings, which together total 6,000 square feet of space, located on 8.6 acres. The buildings include 13 offices plus storage space for 1.5 million specimens and a large research library. In addition to the large Townes Collection, the Institute now houses the Shenefelt collection of Braconidae and Gupta collections of Ichneumonidae. Additional gifts or loans are on the way. I have heard from several people who have recently visited the new facility that it is very impressive. We all wish Henry and Marjorie success in their new location.

Charles C. Porter Collection

The following letter was submitted by Charles:

"Also, you might mention in a future issue of Ichnews that my personal collection is now housed at the Florida Department of Agriculture in Gainesville. The collection remains my property, but material will be loaned from it under the same terms which apply to the regular Florida collection. There are approximately 100,000 specimens in various groups of Hymenoptera, with emphasis on Ichneumonidae, Eumenidae, Vespidae, Sphecidae and Apoidea. It contains a rather ancient base of NE U.S. species (New Jersey, Maryland), large series from Argentina, Chile, Peru, Bolivia and Ecuador, a fair representation of Mexican Hymenoptera, and a great deal from south Texas. With my increasingly close association with the fine group of taxonomic Entomologists at Gainesville and the space available at the DPI's truly stupendous museum, I anticipate rapid expansion and much improved curation. Representation of the Florida fauna naturally is increasing and I'm beginning to process new lots from Greece, the Sangre de Cristo Mts. of New Mexico, and from southern Arizona (SWRS).

"Many parts of my collection need a great amount of work before they can be loaned easily but specialists visiting Gainesville will find it comparatively easy to sort out material of interest to them. Inquiries can be directed to Dr. Howard V. Weems, Jr. or Dr. Lionel A. Stange (Florida Dept. of Agriculture, Division of Plant Industry, Entomology Bureau, Doyle Conner Building, 1911 SW 34th Street, P.O. Box 1269, Gainesville, Florida 32602). Aside from the ichneumonid subfamilies Ephialtinae, Labinae, and the tribe Mesostenini of the Gelinae, anything may be loaned without my direct permission, although the DPI will furnish me a copy of all loan invoices.

"I apologize to those individuals who have asked me to loan material in the past and whose requests mostly have been unfulfilled. Perhaps they will understand that the demands of research, teaching, and 'alpha curation' (fumigating, keeping up to date with thousands of printed locality labels, rough sorting to subfamily, tribe or genus, and more careful sorting of the groups of special interest to me, etc.) have made it difficult for me to satisfy the needs of others. I believe this new arrangement will prove far more attractive for all concerned."

Zoological Survey of India

Note submitted by Girish Chandra: "Ever since Professor Virendra K. Gupta joined Florida University, Gainesville, his collection of Hymenoptera, which contains over 35,000 specimens, including types, of mainly Ichneumonidae and Braconidae, has been donated by Delhi University to the Zoological Survey of India, 34 Chittaranjan Avenue, Calcutta, India. The collection is now under the care of Dr. J. K. Jonathan, in-charge of Hymenoptera Section at Z. S. I."

Archibald Biological Station, Florida

Mark Deyrup writes: "We are building up the ichneumonoid section of the reference collection of the ABS. We are always happy to loan specimens."

South African Museums (various)

While in South Africa, Bill Mason visited the Albany Museum in Grahamstown, the Transvaal Museum and National Collection in Pretoria, and the Capetown Museum. He reports that the holdings of Aculeata are impressive and well curated; those of Ichneumonidae smaller but mostly named by Henry Townes about 15 years ago. The Braconidae are extensive for larger species but deficient for smaller ones. Braconidae in the National Collection in Pretoria can now be expected to improve because of the services of John Donaldson, recently appointed to work in that group.

Museum of Comparative Zoology, Harvard University

Scott Shaw writes: "The MCZ has a very good collection of Ichneumonoidea, comprising some (estimated) 94,000 Ichneumonidae and 15,000 Braconidae. The ichneumonid collection has very good holdings of Neotropical material."

Utah State University

"The accompanying list represents the present Utah State University holdings of undetermined Hymenoptera from various geographical areas (the list excludes Chrysididae and most Aculeata but includes Formicidae, Dryinidae and Bethylidae). Geographical areas included in the list are Nearctic, Neotropical, Afrotropical, Western Palaearctic and Australasian. Figures are approximations and are subject to change as groups are sent out for study and additional material is acquired. A relatively small percentage of this material has been determined to the generic level. In general, we have avoided long series and stressed diversity.

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

Submitted by: George E. Bohart
Department of Biology
Utah State University
Logan, Utah 84322

Unidentified Hymenoptera (except Aculeata and Chrysidae
but including Bethylidae, Dryinidae, and Formicidae) in the
Utah State University Insect Collection.

Family	Geographical Region					Total
	Nearc.	Neotr.	Afrot.	W. Pal.	Austr.*	
Tenthredinidae	2172	49	28	133	0	2382
Pamphilidae	38	0	0	0	0	38
Argidae	158	21	2	2	0	183
Cimbicidae	32	0	0	0	0	32
Xyelidae	10	0	0	0	0	10
Siricidae	50	0	0	0	0	50
Cephidae	185	0	0	20	0	205
Braconidae **	7752	3780	505	965	160	13162
Ichneumonidae	19010	2040	210	910	55	22225
Mymaridae	185	54	40	22	12	313
Trichogrammatidae	70	16	0	5	4	95
Eulophidae	2270	2775	695	500	40	6280
Elasmidae	25	80	8	8	0	121
Signiphoridae	2	2	0	1	1	6
Eutrichosomatidae	0	6	0	0	0	6
Encyrtidae	805	600	165	90	75	1735
Eupelmidae	220	110	45	14	58	447
Eucharitidae	210	100	30	4	0	344
Perilampidae	60	30	15	7	0	112
Agaonidae	0	20	85	0	2	107
Torymidae	540	200	70	60	12	882
Aphelinidae	5	25	0	35	14	79
Ormyridae	10	8	0	60	0	78
Pteromalidae	3280	1800	375	710	30	6195
Eurytomidae	1725	850	265	185	32	3057
Chalcedectidae	3	10	0	0	0	13
Chalcididae	1100	500	65	30	45	1740
Leucospidae	0	0	0	4	0	4
Ibaliidae	21	0	0	0	0	21
Eucoilidae	340	575	75	62	16	1068
Figitidae	570	60	3	35	0	668
Alloxystidae	100	16	6	60	0	182
Cynipidae	310	0	0	70	0	380
Evaniidae	25	200	12	0	30	267
Gasteruptidae	250	30	8	15	1	304
Aulacidae	21	1	0	0	0	22
Proctotrupidae	710	45	0	30	0	785
Stephanidae	0	2	0	0	0	2
Diapriidae	350	650	130	167	3	1300
Scelionidae	855	1100	190	80	50	2275
Heloridae	0	0	0	0	6	6
Platygasteridae	385	350	145	115	35	1030
Ceraphronidae	145	75	65	52	2	339
Bethylidae	183	380	8	12	7	590
Dryinidae	315	190	5	7	3	520
Formicidae	4630	3200	1330	565	370	10095
TOTAL	49127	19950	4580	5035	1063	79755

* Mostly Polynesian, Fijian.

** Approximately 6000 sorted to genus by Paul Marsh.

University of Kansas

Dave Wahl writes: "I have worked on the University of Kansas' undetermined ichneumonid collection for several years and it is now almost completely sorted to genus, although most of the Phygadeuontini remain unsorted. About 15-20,000 specimens are involved, with the greater proportion from the continental United States. California and the Southwest are strongly represented. The foreign material is mostly from Mexico and Central America, although interesting small lots from South Africa and Australia are present. Kansas is an interesting transition area and I have been incorporating material from local malaise trapping in the KU collection." For loans write to George W. Byers, Department of Entomology, University of Kansas, Lawrence, Kansas 66045.

Texas A&M University

Bob Wharton reports: "Texas A&M collection now houses 15,000 curated Braconidae, about a 90% increase in the collection since my arrival 5 years ago. About 1/3 of the material is Opiinae. Much of the collection remains to be determined and we are rapidly accumulating more material in alcohol than we can hope to curate (a problem hardly unique to our collection!)."

Manchester Museum, England

Jim Whitfield writes that the University of Manchester Museum has a good amount of material collected by Hincks. If anyone would like to see this material, write to him.

REFERENCES

In addition to taxonomic papers, we have included a few concerning biology that might be of interest. This is by no means an exhaustive coverage of the biological literature which would take more time than we have available. It is a fairly complete coverage of the taxonomic literature, particularly for the Braconidae, but we are sure there are references missing that should be listed. We rely on our own information, literature searches, and the information sent by you on the questionnaire. We would appreciate hearing from you on references that should be included or ones that need to be corrected.

1984

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ICHNEUMONIDAE
Taxonomy/karyology Pal.
Ichneumoninae

ICHNEUMONIDAE

BRACONIDAE
Taxonomy/biology

BRACONIDAE/ICHNEUMONIDAE
Taxonomy; biocontrol

ICHNEUMONIDAE
Taxonomy/biology

ICHNEUMONIDAE
Taxonomy W. Pal. Reg.

BRACONIDAE

BIOLOGY
Forest insect parasitoids

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ICHNEUMONIDAE
Taxonomy W. Pal. Reg., esp.
of Iberian Pens., Canary Isl.

APHIDIIDAE
Taxonomy; biocontrol

BIOCONTROL
Host/parasite interactions,
reproductive strategies

ICHNEUMONIDAE

ICHNEUMONIDAE
Taxonomy, Oriental Reg.

ICHNEUMONIDAE
Taxonomy/faunistics, Bulgaria

ICHNEUMONIDAE
Japanese Netelia

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ICHNEUMONIDAE

ICHNEUMONIDAE

ICHNEUMONIDAE
 Taxonomy, biology, phylogeny,
 zoogeography, Chile

PARASITICA
 Taxonomy/biology

ICHNEUMONIDAE

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BRACONIDAE
 Taxonomy, biology, biocontrol

BRACONIDAE
 New world Doryctinae

ICHNEUMONOIDEA
 Taxonomy/phylogeny, also
 Hymenoptera as a whole

BRACONIDAE
 Neotrop. Spathiini; also
 biology/taxonomy Sphecidae &
 some Chalcidoidea

BRACONIDAE

ICHNEUMONIDAE

ICHNEWS 9, June 1986

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ICHNEUMONIDAE
Ophioninae

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ICHNEUMONIDAE
Taxonomy, biology

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BIOLOGY

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ICHNEUMONIDAE
Diplazontinae, Mesochorinae

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ICHNEUMONIDAE
Cremastinae taxonomy, biology,
morphology, zoogeography,
biocontrol

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ICHNEUMONIDAE
Biology/ecology

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ICHNEUMONIDAE
Taxonomy/biology

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BRACONIDAE
 Taxonomy, biocontrol, Pal.
 & Indo-Austr. Reg.

BRACONIDAE

APHIDIIDAE
 Biology, biocontrol

ICHNEUMONIDAE
 Neot. & Holar. Mesostenini,
 Ephialtinae, Xoridinae,
 Labiinae

BRACONIDAE
 Braconinae taxonomy/morphology
 coloration/mimicry

ICHNEUMONIDAE

ICHNEUMONIDAE/BRACONIDAE

ICHNEUMONIDAE
 Pal. Ichneumoninae

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ICHNEUMONIDAE

ICHNEUMONIDAE
Iberian Pens., Canary Isl.

BRACONIDAE
Nearctic Dacnusinae

ICHNEUMONIDAE

APHIDIIDAE
Taxonomy/biology, Isreal

ICHNEUMONIDAE
Oxytorinae of Pal. Reg.

ICHNEUMONIDAE
Taxonomy/biology Diplazontinae

ICHNEUMONIDAE/BRACONIDAE

ICHNEUMONIDAE
World Campopleginae

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ICHNEUMONIDAE/BRACONIDAE
 Taxonomy, biocontrol

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ICHNEUMONIDAE
 Pal. Ophioninae

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ICHNEUMONIDAE
 Taxonomy/biology Anomaloninae

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ICHNEUMONIDAE
 Taxonomy Cremastinae,
 Banchinae; biocontrol

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BRACONIDAE
 Taxonomy/morphology/phylogeny
 Agathidinae

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ICHNEUMONOIDEA
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BRACONIDAE/ICHNEUMONIDAE
 Taxonomy/phylogeny esp.
 Euphorinae, Meteorinae,
 Cheloninae

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BIOLOGY
 Behavior, biocontrol aphid
 parasites

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APHIDIIDAE
Taxonomy, morphology, biology,
distribution, biocontrol

BRACONIDAE/APHIDIIDAE

ICHNEUMONIDAE
Ophioninae; biocontrol citrus
pests

ICHNEUMONIDAE
Also Gasteruptionidae,
Evanidae

ICHNEUMONIDAE
Taxonomy, biocontrol

BRACONIDAE
Taxonomy, morphology, biology,
zoogeography

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ICHNEUMONIDAE
 Taxonomy, morphology, biology,
 zoogeography, biocontrol
Tryphoninae, Metopiinae

ICHNEUMONIDAE

ICHNEUMONIDAE
 Biology

ICHNEUMONIDAE
Porizontinae, Ichneumoninae;
 higher-level relationships;
 larval morphology

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ICHNEUMONOIDEA
 New Zealand, Pacific Reg.

ICHNEUMONIDAE
Ichneumoninae

ICHNEUMONIDAE
Ichneumoninae; ZOODAT (Zoogeographic Database of Austria)

ICHNEUMONIDAE

BRACONIDAE
 Taxonomy/biology/biocontrol
Opiinae & Alysiinae

BRACONIDAE
 Taxonomy/biology/zoogeography
Microgastrinae, Rogadinae, leaf miner parasites

BRACONIDAE

ICHNEUMONIDAE

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BRACONIDAE

ICHNEUMONIDAE

ICHNEUMONIDAE
Taxonomy/biology