

ICHNEWS

A newsletter for students of the Ichneumonidae (Hymenoptera)

Number 6

January 1980

Edited and published by: M.G. Fitton and  
Department of Entomology  
British Museum (Natural History)  
Cromwell Road,  
London, SW7 5BD England

I.D. Gauld  
Commonwealth Institute of  
Entomology

EDITORIAL

Season's greetings (rather belated) to all our "readers". May 1980 be a good year for Ichneumonologists (and Ichnews!).

CURRENT NEWS AND NOTES

The Townes' collection continues to expand at an amazing rate. 40,000 specimens were added in 1978 and 13,000 in 1979. Not all have yet been sorted to genus. Apart from curation Henry Townes' recent work has been on the Nearctic Gellini.

Hymenopterists' meeting and dinner. About 40 British hymenopterists gathered at the British Museum (Natural History) on 19 October 1979 for a meeting which included talks, exhibits, discussions and opportunities to examine the collections. The meeting was followed by an informal dinner. Participants thought that this new venture was a success, and it will be repeated in 1980.

Clement Dasch has completed his monograph of the Nearctic Cremastinae and is starting work on the Nearctic Anomaloninae.

It is rumoured that the new Catalog of North American Hymenoptera has been published. It has not reached London yet.

Graham Rotheray has finished his Ph.D. and has moved to Liverpool, where he is Assistant Keeper of Invertebrate Zoology in the Merseyside County Museums.

Bob Mitchell has published a note on Trogus with the aim of soliciting the help of lepidopterists and others in obtaining material. He hopes to solve some of the problems of apparent intergradation among Trogus species in North America. He is planning to maintain laboratory cultures and perform crossing experiments. He has reared field-collected Trogus without difficulty, and may have succeeded in getting reared specimens to breed in captivity (he will not know until May this year).

BIOLOGICAL STUDIES ON SOME DIPLAZONTINAE, PARASITOIDS OF APHIDOPHAGOUS SYRPHIDAE  
(DIPTERA)

by G.E. Rotheray

The Diplazontinae are a well-defined subfamily of ichneumonids, usually reared from aphidophagous Syrphidae. They are egg-pupal or larval-pupal parasitoids and are among the commonest ichneumonids of the British countryside



from May to November each year. The work outlined here, carried out over the past three years, in Glamorgan, S. Wales, suggests they are specific to particular syrphid species.

There has been considerable interest recently, in discovering the mechanisms whereby parasitoids locate hosts. Experiments designed to determine what cues *Diplazontine* females use, showed that all species tested respond to aphid derived, volatile odours and larval integumental, involatile, contact chemicals. Such responses may enable a searching female to locate a potential host within an aphid colony (aphid colonies being the most likely places to find hosts). Interestingly, aphid odour is thought to be important in eliciting oviposition from syrphid females. The end result of these two responses is however, ovipositor insertion into a potential host, not oviposition itself. A further stimulus, which specifically elicits egg release is necessary and is probably perceived from the syrphid haemolymph. It is a differential response to these haemolymph cues, in the various species of host, that may account for the pattern of host-parasitoid relations obtained from rearing data.

One result of the rearing data and some host choice experiments was that *Diplazon laetatorius* (F.) in S. Wales is not so widely polyphagous as previous literature suggests this species to be. It shares a similar range of hosts with *Diplazon tetragonus* (Thun.) and *Diplazon tibiatorius* (Thun.). Two species were host specific, *Homotropus pictus* (Grav.) which is a parasite of *Platycheirus scutatus* (Meigen) and *Enizemum ornatum* (Grav.) which is a parasite of *Metasyrphus luniger* (Meigen) and *Scaeva pyrastris* (L.). The biologies of these monophagous and oligophagous species have been compared.

#### The monophagous species:-

1. Oviposit in first, second and third instar larvae but not host eggs (syrphid larvae have three instars).
2. Have long adult flight periods which coincide with most of the host larval generation times.

#### The oligophagous species:-

1. Oviposit in syrphid eggs, only those at least 48 hours old, first and second but not third instar larvae.
2. Have short adult flight periods which occur for only a part of the host's larval generation times.

In most species investigated there is no preferred oviposition site. However, the oviposition behaviour of *E. ornatum* is peculiar in that when attacking large larvae, females mount the host prior to oviposition and bite the integument. Biting causes larvae to raise their anterior segments, at which point the female rapidly turns round and inserts the ovipositor into the anterior tip of the wriggling host. *E. ornatum* was the only species investigated with so specific an oviposition site. The significance of these results will be discussed in forthcoming publications.

In the British Isles a distribution scheme has been set up for the Syrphidae and a similar scheme is being considered for the Diplazontinae. The Diplazontinae being common and readily identifiable are probably one of the few groups of



Ichneumonidae suitable for such a scheme. It is hoped that, by combining data from the two schemes, some meaningful information can be assembled. If anyone has BI records of Diplazontinae or who would be prepared to record these attractive ichneumonids please get in touch with me so that arrangements can be made. Collecting female Diplazontinae is easy, having located an aphid colony, all you need do is wait for their arrival. Males are usually collected feeding from flowers or, in the case of some species, under the shade of large trees and in woodlands where they 'swarm' in groups of up to thirty individuals. The most productive times are likely to be June, end of July, August and early September.

#### THE GENUS SINOPHORUS

by M. Sanborne

I am attempting a worldwide revision of Sinophorus (= Eulimneria) (Porizontinae = Campopleginae) as a Ph.D. project. The work will include the systematics of final-instar larvae as well as adults, phylogeny and zoogeography. I would be grateful if the readers of Ichnews would loan me any specimens under their care. I am in particular need of Palaearctic material. All loaned material will be returned. The expected date of completion in September 1982 and the results will be published soon after.

#### TRIP TO SOUTH-EAST ASIA (AUGUST - NOVEMBER 1979)

by I.D. Gauld

I first spent about two weeks in Taiwan during which time it was possible to examine the fine collections of Ichneumonidae housed in the Taiwan Agricultural Research Institute, Taichung. A brief trip was made into the mountains to collect but the tail-end of a typhoon made collecting impossible for all but a few hours on one day.

I next spent a month in Brunei. Here I was fortunate to become part of a small British Army expedition into the forest. Unlike the rest of Borneo, the forests of Brunei are virtually untouched. Communications could have proved difficult, but I was able to ride in a helicopter between sites. This enabled me to sample forests at various altitudes, including the moss forests above 2000m in the inaccessible Ulu Temburong region. Collecting in tropical forest is rather difficult and catches are generally small, but the diversity is extremely high. At one site I took 24 species of Enicospilus in a single evening!

From Brunei I moved on to Papua New Guinea where I stayed at Wau in the mountainous interior. Ichneumonids were more common here than anywhere else I visited in south-east Asia. Large pimplines were particularly common flying in forest clearings, whilst brightly patterned mesostenines could frequently be seen resting on leaves of ground vegetation. I found to my cost that many Goryphus can inflict a painful sting. Wau is an ideal collecting locality as a steep road runs from the town up to the summit of Mt. Kaindi at 3000m. This enables one to collect in a variety of vegetational zones including Nothofagus scrub. I ran a light trap on the summit and caught numerous undescribed nocturnal Ichneumonidae, including an Enicospilus with a wing span of almost 80mm.

The final country I visited was West Malaysia where I helped in establishing a reference collection for the use of agricultural entomologists. One week was spent collecting in the Cameron Highlands, an area of largely unspoilt mixed dipterocarp forest. It was here I was fortunate enough to collect some specimens of Sustenus, a poorly known cremastine genus.



This was my first trip to the tropics. In retrospect several improvements could have been made; the most productive of which would have been to delay the trip by about six weeks.

# THE ICHNEUMONIDAE OF C.G. THOMSON

by M.G. Fitton

In connection with a project to catalogue and reclassify (at generic level) all of the 953 species of Ichneumonidae described from Europe between 1873 and 1897 by C.G. Thomson, I visited the Zoological Institute of Lund University in August and September 1978. This project is part of a longer term effort to catalogue and reclassify all of the western Palaearctic Ichneumonidae uniformly with the "Townes' catalogues" of the rest of the world's ichneumonids.

Thomson's collections were acquired by Lund University after his death in 1899. Soon afterwards the Hymenoptera were re-arranged and transferred to new cabinets. Since then the only significant "curatorial" work has been the labelling of some type-specimens by various specialists.

Thomson did not have a type concept in any modern nomenclatural sense and he made no attempt to preserve or label in any particular way the original material of the new species he described. Generally he gave no direct details of specimens with original descriptions, only the localities or general areas where the species had been found. The problem of tracing and recognising type-material is further complicated by the fact that specimens in the collection are very poorly, and often cryptically, labelled. Names of localities are abbreviated and there are virtually no "det." labels.

Lectotype designations have already been published for 391 species of Thomson Ichneumonidae and holotypes have been recognised for another 35. However, illustrative of the need for an assessment of the type-material of all species by someone familiar with the family and able to study the whole collection "in situ" is the fact that 23 of these "lectotypes" and "holotypes" are invalid because the specimens can now be shown not to have been original material of the species concerned.

During my visit I traced, checked and labelled (as necessary) type-material of 826 of the species. Type-material of a further 71 species was considered lost. A total of 534 species have been placed satisfactorily in genera as currently recognised (Townes' classification).

A second visit to Lund is planned for March and hopefully the work will be completed later in 1980 and submitted for publication.

## DIRECTORY

### Change of address

Aeschlimann, J.P. CSIRO, P.O. Box 1700, Canberra City, A.C.T. 2601, AUSTRALIA.

Rotheray, G.E. Merseyside County Museums, William Brown Street, Liverpool L3 8EN, ENGLAND.

Sanborne, M. Department of Biology, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4K1, CANADA.



Additions

- Chen, Bing-huei. Taiwan Agricultural Research Institute, 189 Chung-cheng Rd., Taichung, TAIWAN, Republic of China. (Ichneumonidae of Taiwan.)
- Chiu, Shui-chen. Taiwan Agricultural Research Institute, 189 Chung-cheng Rd., Taichung, TAIWAN, Republic of China. (Ichneumonidae of Taiwan.)
- Waage, Jeff. K. Imperial College Field Station, Silwood Park, Sunninghill, Ascot, Berks., SL5 7PY, ENGLAND.
- Wahl, David. Department of Entomology, University of Kansas, Lawrence, Kansas 66045, U.S.A. (Campopleginae. Revision of Nearctic Venturia.)

RECENT PUBLICATIONS

- CEDERBERG, B. 1979. Stauropogonius bombycivorus, en för Sverige ny parasitstekel. Ent. Tidskr. 100: 11-12.
- CONSTANTINEANU, M. & JONAITIS, V. 1979. On the fauna of ichneumonids in wood plants associations in the Lithuanian SSR. Acta entomologica Lituanica 4: 53-62. [In Russian.]
- DASCH, C. 1979. Ichneumon-flies of America north of Mexico. 8. Subfamily Cremastinae. Mem. Am. ent. Inst. 29: 702pp.
- FRILLI, F. 1978. Studies on Hymenoptera Ichneumonidae. VI. The types of Cryptus and other material in Gravenhorst's collection, Zoological Museum of Wroclaw University. Polskie Pismo Ent. 48: 147-175.
- GAULD, I.D. 1979. An analysis of the classification of the Ophion genus-group. Syst. Ent. 5: 59-82.
- GORDH, G., MENKE, A.S., DAHMS, E.C. & HALL, J.C. 1979. The privately printed papers of A.A. Girault. Mem. Am. ent. Inst. 28: 399pp.
- HE JUN-HUA. 1978. Atlas of natural enemies of economic insects. 300pp. + 50 plates. [In Chinese.]
- HORSTMANN, K. 1979. A revision of the types of Hemiteles species described by Thomson. Ent. Scand. 10: 297-302.
- IDAR, M. 1979. Revision of the European species of Hadrodactylus. Part 1. Ent. Scand. 10: 303-313.
- JONAITIS, V. 1979. Scolobatinae in the Lithuanian SSR. Acta ent. Lituanica 4: 63-78. [In Russian.]
- 1979. Fauna of Echthrini in the Lithuanian SSR. Acta ent. Lituanica 4: 79-88. [In Russian.]
- 1979. Fauna of Anomalinae in the Lithuanian SSR. Acta ent. Lituanica 4: 89-94. [In Russian.]
- 1979. Ichneumons of the subtribe Acrolytina in the European USSR. VII Internationales Symposium über Entomofaunistik in Mitteleuropa Verhandlungen. Leningrad: 212-213. [In Russian.]



- MATTHEWS, R.W., MATTHEWS, J.R. & CRANKSHAW, O. 1979. Aggregation in male parasitic wasps of the genus Megarhyssa. I. Sexual discrimination, tergal stroking behavior, and description of associated anal structures behavior. Florida Entomologist 62: 3-8.
- McFADDEN, T.L. & CREIGHTON, C.S. 1979. An annotated check list of parasites associated with vegetable insects. J. Georgia ent. Soc. 14: 281-285.
- MITCHELL, R.T. 1979. A review of Swallowtail butterfly (Papilionidae) parasites of the genus Trogus. Maryland Entomologist 1(3): 6-7.
- NAKANISHI, A. 1979. Studies on the genus Sussaba Cameron of Japan. Sieboldia 4: 297-315.
- SANDLAN, K. 1979. Sex ratio regulation in Coccygomimus turionella [sic] L. and its ecological implications. Ecol. Ent. 4: 365-378.
- SAWONIEWICZ, J. 1979. The effect of shrub layer on the occurrence of the Ichneumonidae in pine stands on different sites. Memorabilia Zoologica 30: 89-130.
- STANIONYTE, A., JAKIMAVICIUS, A. & JONAITIS, V. 1979. Insect fauna in the Pravirsulis Conservancy area. Acta ent. Lituanica 4: 107-118. [In Lithuanian.]
- ZAJANCAUSKAS, P., JONAITIS, V., JAKIMAVICIUS, A. & STANIONYTE, S. 1979. Entomoparasites of insect - orchard pests in Lithuania. 164pp. "Mokslas" Vilnius. [In Russian.]