

NOTE

First Possible Host Record for the Braconid Wasp Genus *Diamblomera* Enderlein (Hymenoptera: Braconinae)

DONALD L. J. QUICKE, GAVIN BROAD, NINA M. LAURENNE, AND JUPAILIN NAIMAN
(DLJQ, GB) Unit of Parasitoid Systematics, CABI Bioscience UK Centre (Ascot), Department of
Biology, Imperial College at Silwood Park, Ascot, Berkshire SL5 7PY, U.K., Centre for
Population Biology, Imperial College at Silwood Park, Ascot, Berkshire SL5 7PY, U.K., (DLJQ)
Department of Entomology, The Natural History Museum, London SW7 5BD, U.K.; (NML)
Finnish Museum of Natural History, Zoological Museum, Entomological Division, P.O. Box 17
(P. Rautatiekatu 13), FIN-00014 University of Helsinki, Finland. (JN) Tropical Biodiversity and
Conservation Unit, Universiti Malaysia Sabah, Sabah, Malaysia.

Determining host associations for parasitic wasps is fraught with difficulties and many published records are erroneous (Noyes 1994; Shaw 1994). These errors stem both from misidentifications of hosts and parasitoids, and from wrongly assuming associations. They are particularly problematic when it comes to concealed hosts, especially those living in deep or potentially complex situations where there may be more than one species, and the identity of the true host or hosts in these situations is often ambiguous.

Field observations in Sabah of a large braconine wasp, *Diamblomera* sp., strongly indicate that it is a parasitoid of larvae of cerambycid beetles belonging to the subfamily Lamiinae. Details of our observations and identifications are provided below.

During a reconnaissance visit to Poring Springs, a resort within lowland rainforest of Kinabalu National Park, Sabah, NML and DLJQ noticed a large female braconid wasp flying around a large dead (unidentified) tree. However, the wasp subsequently settled on a vine hanging from the tree and a second, apparently conspecific female wasp was then noticed already to be sitting on the same piece of vine about 20 cm away. Both wasps intermittently walked over that piece of vine, apparently searching for hosts, and after some time (approximately 5 minutes) one female raised her metasoma, 'located' her ovipos-

itor more or less between her hind legs and started 'drilling'. This activity was watched for approximately 15 minutes and as she then started moving her metasoma around more noticeably, it was thought that she may have located a host or even oviposited. At this point she was caught and the exact position where her ovipositor was 'drilling' was carefully noted. We proceeded to cut into this piece of dead vine. The stem of the vine is flattened and at this place was approximately 10 cm wide by 3.5 cm thick. Along a length of vine of approximately 40 cm we discovered more than twenty, apparently conspecific cerambycid beetle larvae belonging to the subfamily Lamiinae (identified as such because of the complete absence of legs, and the relatively elongate head with the cardines, submentum and maxillary articulating areas fused). These were almost all of very similar size (approximately 20 mm long, range 12–23 mm, and 2–3 mm wide) and apparently of an appropriate size to be a host for the wasp, *Diamblomera* sp., the females of which were approximately 18 mm long (excluding ovipositor), but a little narrower than the beetle larvae. No other potential hosts were present, i.e. no other even remotely similarly sized insect larvae were found. Unfortunately, no host was found immediately below the point of ovipositor penetration but since it took almost twenty

ty minutes for us fully to cut out and dissect this piece of vine, it is quite possible that any beetle larva had simply moved away from that place, possibly due to the disturbance we caused. A third individual of the wasp was subsequently observed flying around the site but she did not land on the now damaged vine. The vine was identified as *Agelaea borneensis* (Hook. F.) Merr. (Connaraceae) by Mr. Sukup Akin. *Agelaea* is a common SE Asian genus of trees, vines and shrubs (Jarvie and Ermayanti 1996 onwards).

Given that two females of the same species of *Diamblomera* were intensively investigating the same piece of host substrate with one starting to go through oviposition behaviour, and that the substrate contained many, apparently suitably sized larvae of a single species of cerambycid beetle, we feel confident that this is a valid host-parasitoid association. Unfortunately there are no identification keys to the species of *Diamblomera*. Only two species were described under that generic name originally (Enderlein 1920; Quicke and Achterberg 1990), and no further species have subsequently been transferred to it despite ongoing reclassificatory work; however, there probably exist other described species that are currently classified under different genera and full revision is needed.

This is the nearest thing to a first host record for a member of the genus *Diamblomera*, although it may be objected that none of the more than twenty putative hosts seen appeared to have been parasitised. The larger braconines belonging to the Aphrastobraconini (= Iphiaulacini) are often parasitic on concealed wood or stem boring hosts and this association with a vine-feeding cerambycid is therefore not exceptional, though records of parasitism of hosts in vines (lianas) are rare. Further, from what little is known about the hosts of the larger braconines (almost entirely from temperate taxa, particularly those associated with forestry pests), it appears that many attacking subcortical beetles may be quite polyphagous—but whether

all the host records that are listed in Shenefelt (1978) for members of such braconine genera as *Atanycolus* Foerster, which may have similar biologies to *Diamblomera*, are reliable is far from certain. That there is some degree of specialisation is apparent from the fact that, at the same locality, we observed several other species of large Braconinae—belonging to other genera—that were each showing interest in different sites or dead trees (Laurenne *et al.* 2000). Only the accumulation of accurate host records and other details of host ecology, such as substrate, plant or fungal associations, for these taxa will start to show what factors may be important in determining host ranges.

The specimens of *Diamblomera* and the beetle larvae are deposited in The Natural History Museum, London.

ACKNOWLEDGMENTS

We would like to thank Professor Maryati and Dr. Homathevi Rahman (TBCU, UMS, Sabah) for their assistance with planning this visit, Mr. Sukup Akin who kindly managed to identify the vine from a rather poor specimen, and Dr. Mark Shaw for valuable improvements to the MS.

LITERATURE CITED

- Enderlein, G. 1920. Zur Kenntnis aussereuropäischer Braconiden. *Archiv für Naturgeschichte* 84(A): 51–224.
- Jarvie, J.K. and Ermayanti (1996 onwards). Tree Genera of Borneo—Descriptions and Illustrations. <http://django.harvard.edu/users/jjarvie/Borneo.htm>.
- Laurenne, N. M., R. Belshaw, G. Broad and D. L. J. Quicke. 2000. Molecular confirmation of host records for ichneumonoid parasitoids of wood-boring beetle larvae. *Journal of Hymenoptera Research* 9:241–245.
- Noyes, J. S. 1994. The reliability of published host-parasitoid records: A taxonomist's view. *Norwegian Journal of Agricultural Science, Supplement* 16: 59–69.
- Quicke, D. L. J. and C. van Achterberg. 1990. The type specimens of Enderlein's Braconinae (Hymenoptera: Braconidae) housed in Warsaw. *Tijdschrift voor Entomologie* 133: 251–264.
- Shaw, M. R. 1994. Parasitoid host ranges. In: B. A. Hawkins and W. Sheehan (Eds). *Parasitoid Community Ecology*. Oxford University Press, Oxford, pp. 111–144.
- Shenefelt, R.D. 1978. *Hymenopterorum Catalogus (Nova Editio)*. Braconidae 10. Junk, The Hague. pp. 1425–1872.



Quicke, Donald L. J. et al. 2000. "First Possible Host Record for the Braconid Wasp Genus *Diamblomera* Enderlein (Hymenoptera: Braconinae)." *Journal of Hymenoptera research* 9, 430–431.

View This Item Online: <https://www.biodiversitylibrary.org/item/21556>

Permalink: <https://www.biodiversitylibrary.org/partpdf/21826>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: International Society of Hymenopterists

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.