

**The first record of a species in the aberrant subfamily Loboscelidiinae (Chrysididae) in Hong Kong,
Loboscelidia levigata Yao, Liu & Xu, 2010**

Christophe Barthélémy

Sai Kung, Hong Kong. Email: chb99@netvigator.com

ABSTRACT

Records are provided of a new species of chrysidid wasp *Loboscelidia levigata* Yao, Liu & Xu, 2010, to the Hong Kong fauna. This paper is based on two specimens obtained by the author with a Malaise trap at Pak Sha O, Sai Kung Country Park.

Key words: New record, *Loboscelidia*, Loboscelidiinae, Chrysididae, Hong Kong, Pak Sha O

INTRODUCTION

The Loboscelidiinae is a small aberrant and highly modified subfamily of the Chrysididae. It includes only two genera: *Loboscelidia* comprising 47 known species and *Rhadinosceldidia* with three species (Rosa et al., 2014; Kimsey, 2012). The taxonomic placement of the genus *Loboscelidia* varied considerably until Day (1978) placed it in Chrysididae based on abdominal morphology. In fact, nearly 20 years earlier, Maa (1961) was changing the “agreed” view that *Loboscelidia* was in the Diapriidae (Proctotrupoidea) and proposed to create a new family, the Lobosceliidae in the superfamily Bethyloidea and recognised its affinities with Amiseginae. Kimsey 2012 gives a summarised account of the historic placement of the genus *Loboscelidia*.

Loboscelidines are easily characterised by several unusual features such as the insertion of the antennae on a shelf-like extension in the middle of the face, the vertex extended posteriorly forming a curved plate fringed with dense setae and the very large tegula covering the base of both wings.

Specimens are rarely collected making these wasps rather cryptic, although their real abundance may in fact be higher than expected. It is likely that collecting methods have not been sufficiently targeted and the subfamily is under-sampled (Kimsey, 2012).

Most specimens existing in collections are males (85%), which further complicates the matter since sexes are strongly dimorphic. It is known that males are less stout than females and have five visible abdominal segments while females have four.

The subfamily is essentially south Asian but four species are found in northern Australia and seven in China (Rosa et al., 2014), Figure 1 indicates the known distribution of the genus *Loboscelidia*. It is likely that the loboscelidine fauna is highly endemic due to its poor flight capabilities, as evidenced by the weakly veined wings and enlarged tegula, and new species are bound to be found in the

numerous islands of south-east Asia and Indonesia but also elsewhere in its geographic range and new species do appear regularly in the literature.

The Chinese species of *Loboscelidia* are, to date:

***Loboscelidia* Westwood, 1874: 172**

Type: *Loboscelidia rufescens*, Male Syntypes, “Insulam Malayanam, Sula Isld.” [Plate XX, Fig.13.]. OUMNH

***guangxiensis* Xu, Weng & He, 2006: 208**

Holotype male; China: Guangxi, Jiuwandashan
Distribution: China: Guangdong, Guangxi. SCAU

***hei* Liu, Yao & Xu, 2010: 642**

Holotype female; China: Fujian, Mt Meihua. SCAU
Distribution: China: Fujian

***levigata* Yao, Liu & Xu, 2010: 528**

Holotype male; China: Guangdong, Chebaling National Nature Reserve. SCAU
Distribution: China: Fujian, Guangdong; **Hong Kong** [new record]

***maai* (Lin, 1964): 238**

Scelidoloba maai Lin. Holotype male; Taiwan, Paomingszu. TARI
Distribution: Taiwan

***sinensis* Kimsey, 1988: 76**

Holotype male; China: Hainan. NHML
Distribution: China: Zhejiang, Fujian, Guangdong, Hainan

***striolata* Yao, Liu & Xu, 2010: 530**

Holotype male; China: Guangdong, Nanling National Nature Reserve. SCAU
Distribution: China: Zhejiang, Guangdong

***zengae* Liu, Yao & Xu, 2010: 643**

Holotype female; China: Hainan, Wuzhishan. SCAU
Distribution: China: Hainan

Abbreviations used:

NHML: The Natural History Museum, London, UK

OUMNH: Oxford University Museum of Natural History, Oxford, UK

SCAU: Department of Entomology, College of Natural Resources and Environment, South China Agricultural University, Guangzhou, China

TARI: Entomology Collection, Taiwan Agricultural Research Institute, Taichung, Taiwan

The biology of the genus is poorly known; however, mandibles and ovipositor morphology resembles that of the subfamily Amiseginae suggesting that it may be parasitic on eggs of Phasmidae (Kimsey, 1990, 2012) and a couple of species have been reared from phasmid eggs (Krombein, 1983; Kimsey, 2012). Other structural modifications have lead workers to add that it may be myrmecophilous (Fouts, 1922; Kimsey 2012), searching for phasmid eggs collected and stored by ants.

MATERIALS & METHOD

The two specimens were caught using a Malaise trap placed in the author's garden at Pak Sha O, Sai Kung Country Park, Hong Kong (circa 22.25°N- 114.19°E, UTM: 50Q KK 242 849, 70masl). It is a resident trap and has been in place since 2004, the collecting bottle has been changed on average every 14 days.

The garden is sited on the northern forested side of a small hill (400m) and is a reclaimed area over mostly what was a *Citrus* spp. orchard. The garden structure is early successional (cyclic maintenance episodes) and comprises various native plants, annual and perennial. The garden is fringed on the hill side (South) by a mature secondary forest (50+ years), while on the valley side (North) lies the small village (19 houses) and an abandoned paddy field (now a lowland wetland).

Details of the two specimens caught are:

Male, Pak Sha O (Malaise trap), HK, ref.: M078.C.Hy.7, UTM: 50Q KK 242 849, 70m, coll. Christophe Barthélémy, 16 June 2010 to 03 July 2010.

The other is:

Male, Pak Sha O (Malaise trap), HK, ref.: M300.C.Hy.3, UTM: 50Q KK 242 849, 70m, coll. Christophe Barthélémy, 24 June 2017 to 08 July 2017.

Figures 2 & 3 show habitus and details of the head and tibia.

RESULTS & DISCUSSION

It is a new species for the Hong Kong fauna, although not overly surprising, since the holotype was collected in Guangdong, the neighbouring province.

All the Hymenoptera specimens caught in this Malaise trap were systematically extracted since 2008, and sorted in two groups, Aculeata on one side and non-aculeate Hymenoptera on the other. The aculeates were systematically kept/recorded in the author's collection,

whilst the remaining Hymenoptera were sent to various specialists and institutions around the world, notably the London Natural History Museum.

It is interesting to note that the same trap has yielded several specimens of three species of Amiseginae, while another trap placed elsewhere in Hong Kong, yielded one additional species of amisegine (all yet to be identified) but only two specimens of a single species of *Loboscelidia*.

We could assume that the abundance and possibly diversity of loboscelidines may somehow correlate with the diversity and abundance of phasmids in the territory (18 species; Ho, 2013) and that of amisegines, particularly in Pak Sha O, where stick insects were varied and abundant.

However, having collected only two specimens in the last 10 years or so may be symptomatic of the age-old confusion that this cryptic genus has created; the author most likely misplaced additional specimens in non-aculeate hymenoptera and soon after dispatched them around the world where future workers may one day rediscover them.

ACKNOWLEDGMENTS

I wish to thanks Graham Reels, UK for editing the English of the original manuscript and Prof. Lynn Kimsey, University of California Davis, USA for identifying the voucher specimen and for reviewing this paper.

REFERENCES

- Day, M.C., 1978. The affinities of *Loboscelidia* Westwood. *Systematic Entomology* 4: 21-30.
- Fouts, R.M., 1922. New Parasitic Hymenoptera from the Oriental Islands. *The Philippine Journal of Science* 20(6): 619-636.
- Ho, G.W.C., 2013. *Insect Fauna of Hong Kong, Fascicle 2: The Stick Insects of Hong Kong*. Hong Kong Entomological Society, Hong Kong. 184pp.
- Kimsey, L.S., 1988. Loboscelidiinae, new species and a new genus from Malaysia (Chrysididae, Hymenoptera). *Psyche* 95(1-2): 67-79.
- Kimsey, L.S., 2012. Review of the odd chrysidid genus *Loboscelidia* Westwood, 1874 (Hymenoptera, Chrysididae, Loboscelidiinae). *ZooKeys* 213: 1-40.
- Kimsey, L. and Bohart, R.M., 1990. *The Chrysidid Wasps of the World*. Oxford University Press, 2011. 652pp.
- Krombein, K.V., 1983. *Biosystematic Studies of Ceylonese Wasps, XI: A Monograph of the Amiseginae and Loboscelidiinae (Hymenoptera: Chrysididae)*. Smithsonian Institution Press, Smithsonian Contributions to Zoology 376: 79pp.

Liu, J.X., Yao, J.M. and Xu, Z.F., 2010. Two new species of genus *Loboscelidia* (Hymenoptera: Chrysididae: Loboscelidiinae) from China. *Acta Zootaxonomica Sinica* 35(3): 641-645. [in Chinese with English summary]

Maa, T.C. and Yoshimoto, C.M., 1961. Loboscelididae, a new family of Hymenoptera. *Pacific Insects* 3: 523-548.

Rosa, P., Wei, N.S. and Xu, Z.F., 2014. An annotated checklist of the chrysidid wasps (Hymenoptera, Chrysididae) from China. *ZooKeys* 455: 1-128.

Westwood, J.O., 1874. *Thesaurus Entomologicus Oxoniensis*. Clarendon Press, Oxford. 205pp.

Yao, J.M., Liu, J.X. and Xu, Z.F., 2010. Two new species in the genus *Loboscelidia* (Hymenoptera: Chrysididae) from China. *Florida Entomologist* 93(4): 526-534.

Xu, Z.F., Weng, L.Q. and He, J.H., 2006. A new species of the genus *Loboscelidia* (Insecta, Hymenoptera) from China. *Acta Zootaxonomica Sinica* 31(1): 208-210.

FIGURES

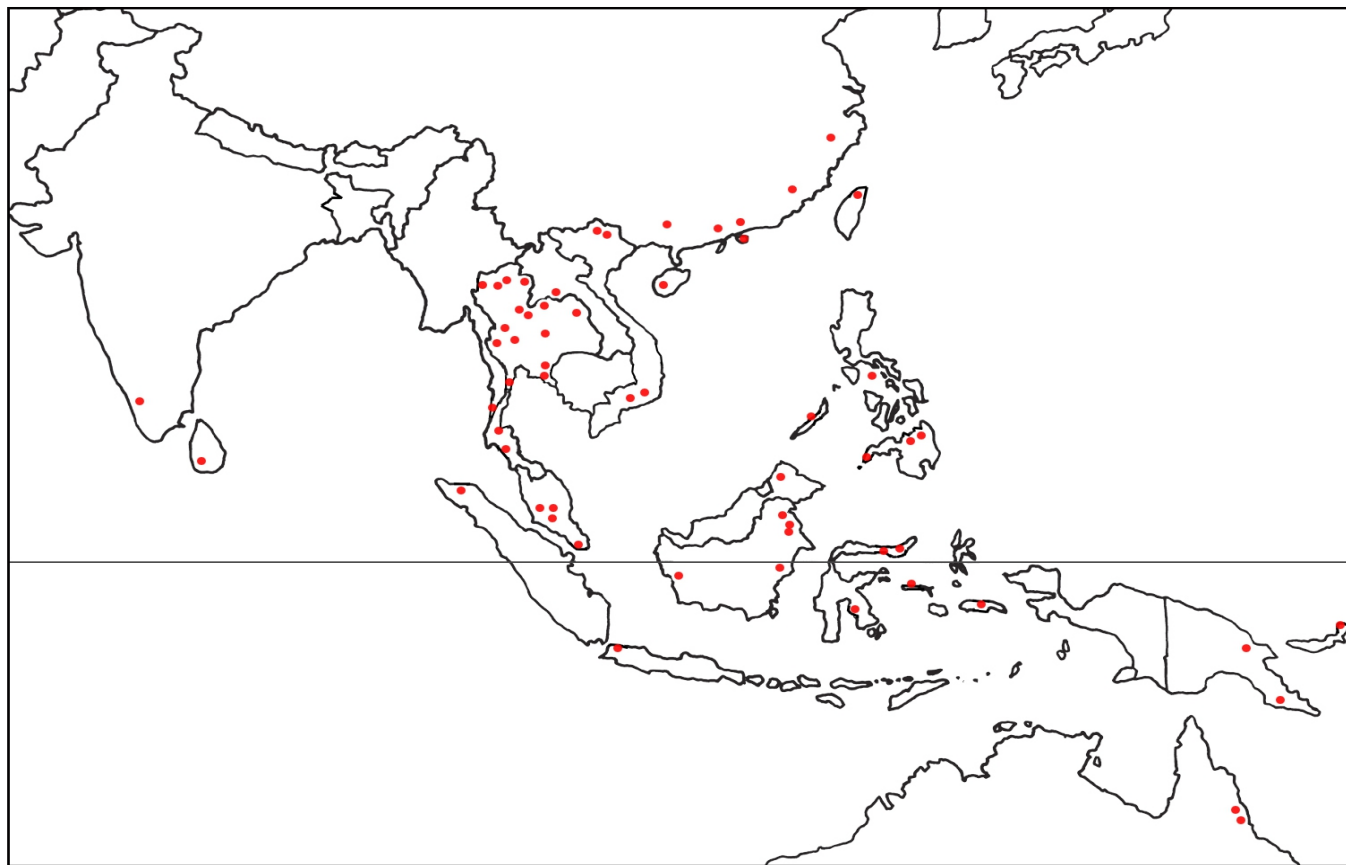


Figure 1. Distribution of the genus *Loboscelidia*. Map redrawn from Kimsey (2012).



Figure 2. Habitus of *Loboscelidia levigata*.



Figure 3. Head and hind leg showing the membranous feature on tibia.