

with orange and metallic blue scaling. Ground colour of underside silvery grey. Wing patterns similar to male, except for darker submarginal and marginal bands.

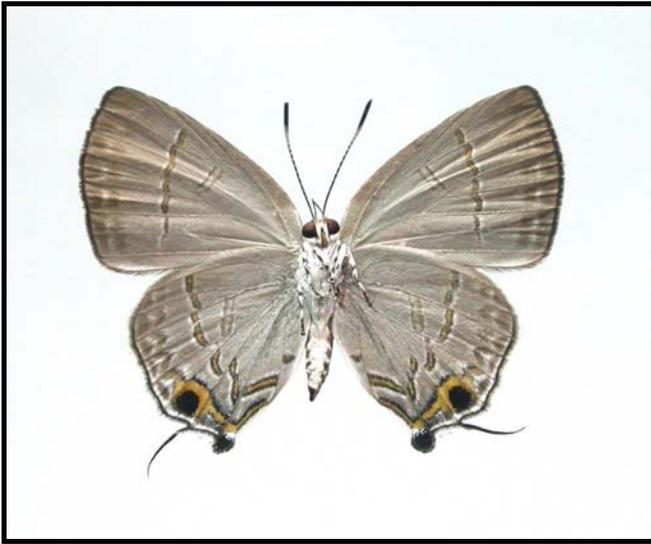


Fig. 6. Underside of *S. nasaka* ♀: Pat Sin Leng Country Park, 200m, 22/23 June 2004, coll. W. K. Leung & W. L. Hui

Other information

Immature biology: There is no information on immature stages of this species.

Occurrence: It is undoubtedly a multivoltine species. Adults are found between June and July; there are also photograph records taken in April and November (Yim, Chong, Yiu & Yiu, unpublished photograph records).

Distribution: China (Hong Kong, Fujian, Guangxi and Hainan), Sikkim to Burma, Thailand, Laos and Sunderland (Eliot, 1992; Osada et al, 1999; Pinratana, 1981; Wang & Fan, 2002; Xu & Jiang, 2001). In Hong Kong, it has scattered a distribution in the central and north-eastern New Territories.

Discussion

S. nasaka was once misidentified as *Rapala refulgens* in Chou (1994), but an amendment was made in the revised edition (Chou, 1999) subsequently. Meanwhile, the record of *Rapala refulgens* in Southern China (Bascombe, 1995) was probably an error adopted from Chou (1994).

S. nasaka inhabits woodlands and dense scrublands. It has rapid flight and often settles on vegetation for short periods. Males are rarely seen while females appear to be more common. Adults are attracted to flowers and were observed taking nectar from *Mikania micrantha* and *Litchi chinensis* (Yim & Yiu, unpublished photograph records). With *S. chandrana*-like habit and *Rapala manea*-like appearance, *S. nasaka* behaves like a combination of these two fairly common species. This probably explains why it has not been reported in earlier studies even though it has a fairly wide distribution. In fact, after examining albums of several amateur photographers, *S. nanaka* was found in some of their previous photographic records, and these provided additional

information on the distribution of this newly recorded butterfly.

Acknowledgements

We would like to thank Kwok-leung Yip (AFCD) for giving us useful comments on the manuscript. Yik Man Yim, Paul Chong, Michael Yiu and Shiu Man Yiu provided unpublished photograph records of *S. nasaka*. Siu-ki Clive Lau (AFCD) provided literature relevant to this study. Colleagues from AFCD assisted greatly in field work.

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A new record for Hong Kong and China of a Polistine wasp of the genus *Ropalidia* : *Ropalidia mathematica* (Vespidae: Polistinae: Ropalidiini)

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The eusocial wasp *Ropalidia mathematica* (Smith, 1860) has been recorded from various localities in Hong Kong by the author. This paper is a short description of this species. *Ropalidia* species are distinctive from other eusocial wasps by the petiolate 1st gastral segment, the fused and bulbous 2nd

tergum and sternum. They are small insects, *Ropalidia mathematica* being the smallest of the three locally recorded species in that genus (*R. fasciata*, *R. hongkongensis* and *R. mathematica*), not exceeding 9.5 mm in length for workers (measurement is taken from the head to the apex of the 2nd gastral segment due to the collapse of the following segments). Males and queens have not yet been recorded. The coloration is lighter than the other two *Ropalidia* species and the wasp is somewhat maculated with black rufous and yellow markings (Fig. 1-3).

against ants. The cells are un-specialised, i.e. there is no difference in size for workers, queens and males. The nest material is essentially composed of loosely woven glandular secretions leaving numerous “windows”.



Fig. 1. Lateral view of a *Ropalidia mathematica* worker.

This wasp is actually widespread in South East Asia and it is quite surprising that it had never been recorded for Hong Kong or China previously, possibly due to its reduced size and inconspicuous colors and habits. The known localities in SE Asia are (Nguyen *et al.*, 2006): India (Meghalaya); Thailand, Vietnam, Sumatra; Java; Bali; Sumbawa; Flores; Karimor; Djawa; Sunda Straits; Sulawesi, Lombok, Flores; Sumba; Timor. In Hong Kong this species has been recorded from Kornhill (HK Island) and Pak Sha O (Sai Kung Country Park), although it is possibly wide spread across the territory.

One colony was discovered at the end of June 2006 hanging from climbers in a Ficus tree. It was situated approximately 3 m off the ground and contained four to five individuals. The drop-shaped single comb is typical of this species. It is attached to the substrate by a single pedicel (Fig. 4). The comb contained a full brood, from eggs situated at the bottom to mature larvae placed at the top. Although *Ropalidia* species are known to apply an ant repellent to the petiole (Gadagkar, 1991), this has not been confirmed with *R. mathematica* in Hong Kong. Additionally the pedicel may be imbued with the substance but it seems to be too short to offer a real protection



Fig. 2. Dorsal view of a *Ropalidia mathematica* worker.



Fig. 3. Head view of a *Ropalidia mathematica* worker.

The colonies in Hong Kong are founded towards the end of March and April. Although a number of species of *Ropalidia* are known to have multiple foundresses (Gadagkar, 1991), this is not demonstrated locally and most of the Polistine colonies studied to date locally are in fact founded by a single queen (pers.obs. unpubl.). The colonies develop all through the summer and finally die off at the onset of autumn. Males of *Ropalidia* are produced throughout the colony cycle or at least after the emergence of the 1st workers. This is quite unique in the Polistine subfamily which generally produces males towards the end of the colony cycle. The colonies are most probably reduced in size, never having more than ten to twenty workers, as is the case within the *Stigma* group to

which *R. mathematica* belongs (Spradbery, 1991). As with all other species of *Ropalidia*, *R. mathematica* extracts the meconium (larvae faeces) at the end of the larval development, just before pupation, by creating a hole at the end of the cell, later plugged by the workers for pupation. The dominance hierarchy is not known for *R. mathematica*, but most probably the queen maintains her dominant status by active aggression and disturbing any attempt by other females to lay eggs. Pheromone control is not proven in most Polistine wasps.



Fig. 4. (left) Lateral view of a *Ropalidia mathematica* nest at initiation stage. No worker has yet emerged. Note the single pedicel and (right) frontal view of a *Ropalidia mathematica* nest. Note the large larvae at the top of the nest.

The particular food provision of *R. mathematica* is not known locally but it is assumed that this wasp preys on a variety of small caterpillars as a proteinaceous food source for the larvae. Carbohydrates are most certainly provided through plant nectars and sap and possibly honeydew from various Sternorrhyncha. The particular diet of adults is not known and in general this remains relatively unknown for most Vespidae (Hunt, 1991).

Although direct predation of nests of *R. mathematica* has not been observed locally, Polistine colonies often fall prey to larger Vespids particularly *Vespa tropica*, *V. ducalis* and *V. soror*.

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VERTEBRATES

Whatever happened to the humphead wrasse, *Cheilinus undulatus*, after its CITES Appendix II listing?

by Yvonne Sadovy

The Napoleon fish, or humphead wrasse (*So Mei* in Cantonese) (Fig. 1), was one of the first commercial fish species to be listed on a CITES (Convention on Trade in Endangered Species of Flora and Fauna) Appendix when delegates from more than 150 countries reached a consensus that it be included on Appendix II in October of 2004. Species are listed on Appendix II if they can be demonstrated to be currently or potentially at risk of extinction if current practices persist. Because of the heavy and largely unregulated international trade in live individuals of this species, for food, mainly into and through Hong Kong, this species was considered to be at risk. The CITES listing is a powerful and positive step in the direction of sustainable management because the Convention requires that exporting countries demonstrate that exports are sustainable. If they cannot demonstrate this, then the Convention enables sanctions on exports to be introduced, so there is strong incentive to comply. Both exporting and importing countries play a role in ensuring (through a permitting system) that trade is conducted sustainably, such that Hong Kong, on the receiving end, has a responsibility to closely monitor imports of this species.



Fig. 1. Napoleon fish in the wild. This spectacular creature is one of the largest of all reef fishes and can reach 2 m in length. Its populations are threatened by the live reef food fish