

China Sea are subject to unique stresses and offer unique opportunities to study the resilience of corals and coral communities. My previous work has mostly been about how corals respond to stress and the telltale signs that stress events leave in coral skeletons. I hope to continue that work and expand into investigating the behaviour of corals in sub-optimal environments. There are many potential collaborations here as well with researchers who are doing fine work teasing apart different components of the ecological web.

Nature is too complex for the broad ecological questions being addressed in this millennium to be undertaken by a researcher working alone. A willingness to collaborate and a broad experience base are, I believe, two of the most important characteristics of successful ecological researchers. Theoretical knowledge is fundamental to learning, but the more exposure one has to a diverse range of research, the easier it is to understand those ecological webs. The ability to think laterally is seldom apparent in researchers who never leave their comfort zone. In my experience, the more exposure a student has to real research during their degree, the easier it is for them to become a good researcher in the future. My advice to anyone who wants more out of university than just a pass degree and a job at McDonalds? Get out there, get qualified and volunteer!



## New *Planaeschna* record from Hong Kong (Odonata: Aeshnidae)

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During late October 2005 I undertook a crepuscular survey of dragonflies at Wu Kau Tang. In the 10-20 minute feeding frenzy which takes place just before dusk, I captured a total of seven aeshnid specimens using a net. Six of the seven specimens were identified as *Gynacantha japonica* Barteneff and the remaining specimen belongs to the genus *Planaeschna* McLachlan. It may represent an undescribed species. No previous species of *Planaeschna* has been recorded from Hong Kong.

The genus *Planaeschna* is mainly confined to Indo-China with outliers occurring in South China, Thailand, Burma, India (Assam) and Japan. Seven species of *Planaeschna* have been described from China, which are *P. celia* Wilson & Reels, 2001 (Hainan), *P. gressitti* Karube, 2002 (Guangdong),

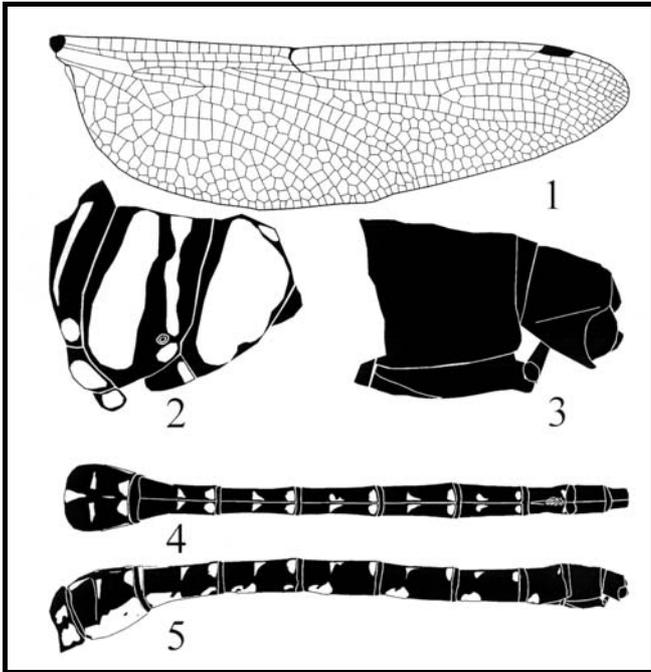
*P. maolanensis* Zhou & Bao, 2002 (Guizhou), *P. risi* Asahina, 1964 (Japan & Taiwan), *P. shanxiensis* Zhu & Zhang (Shanxi), *P. suichangensis* Zhou & Wei, 1980 (Guangdong, Guangxi & Zhejiang), *P. taiwana* Asahina, 1951 (Taiwan). In addition, a further five species of *Planaeschna* have been described from Vietnam. A total of 17 species have been described to date with nine of these named in the last 10 years.

The Hong Kong female *Planaeschna* does not belong to *suichangensis*, which is the most widespread and abundant *Planaeschna* species recorded from Guangdong. Currently the female *gressitti* is unknown but the abdomen does not have yellow spots, adjacent to the transverse carina, which are linked to basal, ventral yellow spots to form a yellow median from S3-8. This ringed pattern is possessed by male *gressitti* (Karube, 2002) and in all other *Planaeschna* species the feature is exhibited by both males and females. The Hong Kong female does not have this feature so is most unlikely to belong to *gressitti*. Two new species of *Planaeschna* from central and north Guangdong await description but the Hong Kong female does not belong to either of these new species. It is closest to *risi* but further specimens are nevertheless required, especially a male, before a clear placement of the Hong Kong *Planaeschna* can be made. *Planaeschna risi* was recorded from Guangxi by Wilson (2005) but evaluation of further material from Guangxi and Guangdong indicates this material does not in fact belong to *risi*, which is endemic to Taiwan and the Ryukyu islands.

The Hong Kong female *Planaeschna* was collected over abandoned marshy agricultural land at San Uk Ha, Wu Kau Tang on the evening of 30 October 2005. *Planaeschna* larvae dwell in flowing streams usually in montane, forested areas. Most species are known from altitudes exceeding 500 m. Only one species, described from North Vietnam, *Planaeschna cucphuongensis* Karube, is known from lowland forest (Karube, 1999). The new *Planaeschna* species is likely to breed in montane forested tributary streams in the country park surrounding Wu Kau Tang but its larvae may utilize the tributaries or main stream flowing through the Wu Kau Tang basin i.e. the area covered by the Wu Kau Tang Outline Zoning Plan.

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Figures 1-5 *Planaeschna* sp., Wu Kau Tang, Hong Kong. (1) Hindwing; (2) synthorax; (3) caudal segments 9-10, lateral [cerci and styles missing]; (4) abdomen segments 9-10, dorsal; (5) abdomen segments 1-10, lateral.

## *Sinthusa nasaka* (Horsfield) (Lepidoptera: Lycaenidae), a butterfly new to Hong Kong

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*Sinthusa* Moore, 1884, comprises about a dozen small species (Bascombe, 1999), distributed from India to Taiwan, including Sundaland, the Philippines and Sulawesi (Eliot, 1992). In the last decade, several new taxa in this genus, such as *S. zhejiangensis* Yoshino, 1995 and *S. menglaensis* (Wang, 1997) were discovered in Southern China, which may reflect the high diversity of the genus in this region. In Hong Kong, this genus has been only represented by a single species, *S. chandrana* (Bascombe, 1999; Lo & Hui, 2004).

In butterfly surveys conducted in Hong Kong during the summer of 2004, several female specimens of a suspected *Sinthusa* species were found (Fig. 1). The publication of the discovery has been delayed for almost two years because meaningful taxonomic comparison could not be done until a male specimen was collected in July 2005, and the identity of this lycaenid was then confirmed to be *S. nasaka*.

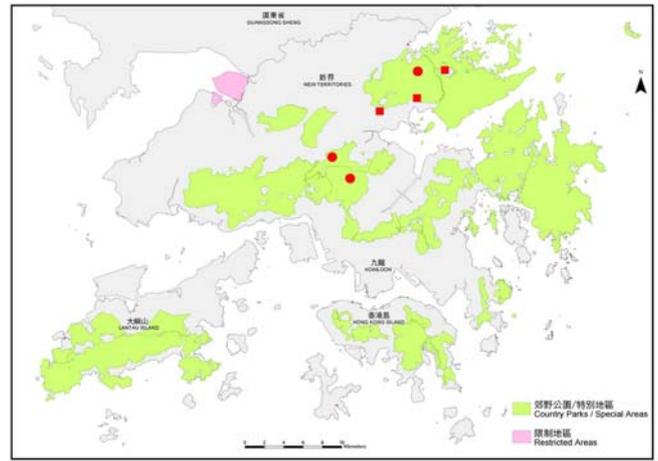


Fig.1. Distribution of *S. nasaka* ssp. in Hong Kong. (Circle denotes record with voucher specimen; square denotes photograph record from Yim, Chong, Yiu & Yiu).

It is worth noting that previously published and illustrated records of this species in China appear to be all female (Gu & Chen, 1999; Wang & Fan, 2002; Chou, 1994); the male *S. nasaka* of the race in China is thus illustrated and described here for the first time.

### Materials and Methods

Apart from materials found in Hong Kong, specimens of *S. nasaka amba* (Kirby, 1878) from the Malay Peninsula were used in this study for comparison. Voucher specimens will be deposited in the Agriculture, Fisheries and Conservation Department, Hong Kong (AFCD).

Comparative materials examined:

*Sinthusa nasaka amba* (Kirby, 1878)

1♀, Malaysia, Perak, May 2005; 1♂1♀, same loc., June 2005, coll. local collector (1♂ genitalia dissected: YFL Iy0007).

The genitalia of male specimens were prepared using the following procedures. The abdomen was first removed and placed in 10% NaOH under room temperature for 24 hrs to dissolve the soft tissue. It was then transferred to 70% ethanol and dissected under a stereomicroscope. The dissected genitalia were preserved in 70% ethanol and labelled properly for further study.

### Result

Having compared the male genitalia of specimens from Hong Kong and the Malay Peninsula, no major difference was found and their similarities reveal their conspecific relationship.

### Specimens examined

*Sinthusa nasaka* (Horsfield, 1829) ssp.

3♀, Pat Sin Leng Country Park, 200m, 22/23 June 2004, coll. W. K. Leung & W. L. Hui (AFCD); 1♀, same loc., 26 June 2004, coll. Y. F. Lo & W. L. Hui (AFCD); 1♀, Tai Mo Shan Country Park, 400m, 09 July 2004, coll. Y. F. Lo & W. L. Hui.

Hui; 1♂, Shing Mun Country Park, 500m, 23 July 2005, coll. W. L. Hui (genitalia dissected: YFL 1y0001).

### Diagnostic Features of *Sinthusa nasaka* ssp. in Hong Kong

Male (Figs. 2 & 3)

Forewing: termen, costa slightly convex, dorsum convex at base. Ground colour of upperside oily blue. Ground colour of underside brownish grey. Cell-end stripe forming double pale brown bars. Post-discal band brownish orange bar outwardly edged with thin white line, running from  $R_{s2}$  toward  $CuA_2$ ; submarginal and marginal bands faint, only slightly darker than ground colour. Hindwing: wing tail at the end of  $CuA_2$ ; tornal lobe present but small. Ground colour of upperside bright blue, tornal lobe with orange and metallic blue scaling. Ground colour of underside brownish grey.



Fig. 2. Upperside of *S. nasaka* ♂: Shing Mun Country Park, 500m, 23 July 2005, coll. WL Hui



Fig. 3. Underside of *S. nasaka* ♂: Shing Mun Country Park, 500m, 23 July 2005, coll. W.L. Hui

Cell-end stripe forming double pale brown bars. Post-discal spot forming brownish orange broken bar edged with black and white line on both sides, from  $Sc+R_1$  towards  $CuA_2$  and a “V” shaped band forming in space  $CuA_2$  and 2A. Submarginal and marginal bands zigzag shaped and barely seen. A dark

spot enclosed by orange circle in space  $CuA_1$ , orange and metallic blue patch in space  $CuA_2$ . Tornal lobe dark brown with metallic blue scaling.

Male secondary sexual characters: scent brand across the origin of  $R_s$  on upperside of hindwing and a hair tuft on the forewing underside dorsum.

Male genitalia: (Fig. 4) typical form of the genus. Valvae long and narrow. Phallus long, a distant pointed process at the dorsal posterior end of aedeagus.

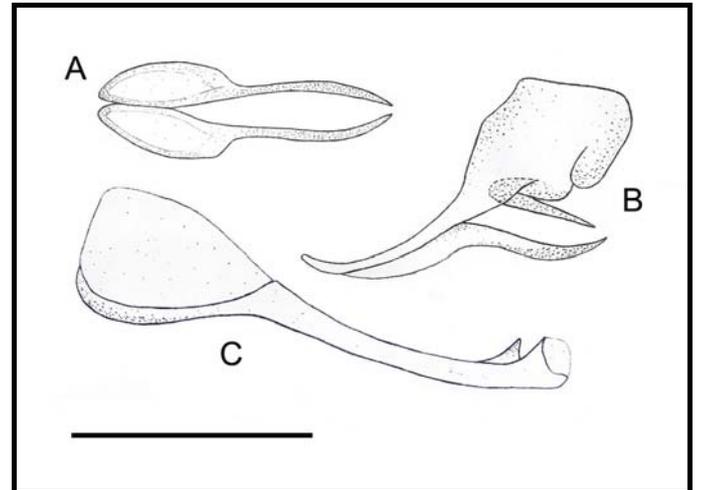


Fig. 4. Male genitalia of *S. nasaka* ssp. in Hong Kong: A. ventral view of valvae; B. lateral view of 9<sup>th</sup> + 10<sup>th</sup> sclerites; C. lateral view of phallus. Scale bar = 1mm.

Female (Figs. 5 & 6)



Fig. 5. Upperside of *S. nasaka* ♀: Pat Sin Leng Country Park, 200m, 22/23 June 2004, coll. W. K. Leung & W. L. Hui

Forewing: termen, costa slightly convex, dorsum straight. Ground colour of upperside dark brown. Ground colour of underside silvery grey. Wing patterns similar to male, except for more pronounced submarginal and marginal bands. Hindwing: wing tail at the end of  $CuA_2$ ; lobe present but small. Ground colour of upperside dark brown, tornal lobe

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

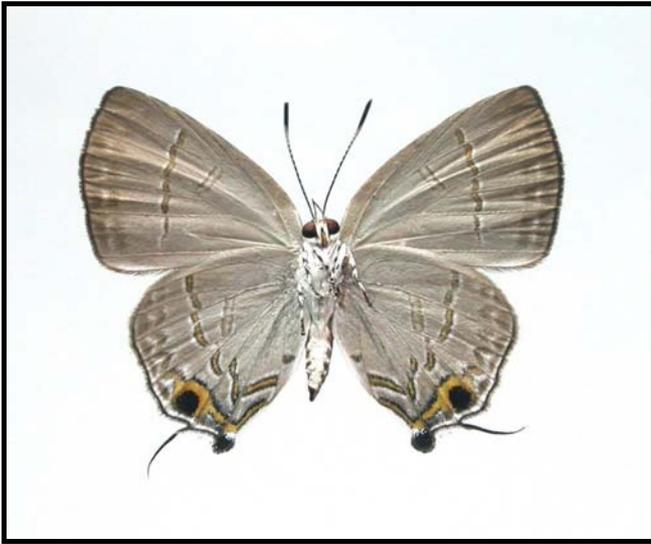


Fig. 6. Underside of *S. nasaka* ♀: Pat Sin Leng Country Park, 200m, 22/23 June 2004, coll. W. K. Leung & W. L. Hui

#### 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 1<sup>st</sup> gastral segment, the fused and bulbous 2<sup>nd</sup>

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 2<sup>nd</sup> 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 1<sup>st</sup> 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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## 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