

## ENCOUNTERS WITH MATING PAIRS OF *ANISONEURA SALEBROSA* GUENÉE, IN SINGAPORE (LEPIDOPTERA: NOCTUIDAE: CATOCALINAE)

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### INTRODUCTION

The noctuid moth, *Anisoneura salebrosa* Guenée, 1852, is the type species for the genus, and is known to occur in Nepal, India, Bangladesh, China, Taiwan, Japan, the Philippines, Thailand, Vietnam, Sumatra, Peninsular Malaysia, Borneo, and Sulawesi (Holloway, 2005; Kononenko & Pinratana, 2005). In Singapore, this species has been occasionally encountered within the forests of the Central Catchment Nature Reserve (CCNR), individually, and as mating pairs. Here, we highlight two separate encounters with mating moths of this species, with both occasions being recorded from the Nee Soon Swamp Forest.

### OBSERVATIONS

On the night of 30 May 2009, during a faunal survey at the Nee Soon Swamp Forest, a mating pair of *Anisoneura salebrosa* was encountered at ca. 2255 hours (Fig. 1). Comparisons with published illustrations for this species were helpful for positive identification (Holloway, 2005: Pl. 11—moth 7; Kononenko & Pinratana, 2005: Pl. 30—moths 3, 4). The moths were united at the ends of their abdomens, as they were perched on a broad leaf of *Syzygium* species (Myrtaceae) at ca. 2.5 m above the forest floor. The slightly smaller male (wingspan ca. 60 mm) was positioned below the female (wingspan ca. 70 mm).



Fig. 1. Mating pair of *Anisoneura salebrosa* (male below), perched on a leaf of *Syzygium* species (Myrtaceae), encountered on 30 May 2009 (ca. 2255 hours) at the Nee Soon Swamp Forest. (Photograph by: Celine H. S. Low).

During another nocturnal survey (also at Nee Soon Swamp Forest) on 5 Dec.2009, a mating pair of the same species was found perched on the leaf of *Clerodendrum villosum* (Lamiaceae) at waist-level at ca. 2045 hours (Figs. 2, 3). Their wing patterns, approximate sizes and sexual dimorphism (male smaller) were consistent with the earlier pair (observed on 30 May 2009). Their abdomens were attached apically and the pair was aligned horizontally, with the male facing the right. They were photographed in-situ and left undisturbed as we proceeded with our transect.

Upon our return to the same site three hours later (ca. 2355 hours), we noticed that the mating moths had already repositioned themselves in a vertical alignment, with the male below, facing downwards (Fig. 4, compare with Fig. 2). From the ventro-lateral perspective, the underwing of the male was just visible, and its retinaculum could be discerned on closer inspection (Fig. 5). Thereafter, we left the pair to continue with their copulation, as we were unable to extend our stay to observe the eventual separation.

At the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research (RMBR), National University of Singapore, *Anisoneura salebrosa* is represented by a single Singapore specimen: ZRC.LEP.277 (male, body length: 25 mm, forewing length: 28 mm, coll. Nature Reserves Survey—light trap, 28–29 May 1992, Nee Soon Swamp Forest). A larger species, *Anisoneura aluco* (Fabricius, 1775) is also represented by a single specimen: ZRC.LEP.276 (male, body length: 38 mm, forewing length: 52 mm, coll. R. Morrell, 25 Jul.1955, “Singapore”). There have not been more recent accounts (sightings or specimens) of this species in Singapore, thus far.

At present, the diagnostic larva of *Anisoneura salebrosa* appears to be undescribed, and no documented larval hostplants seems to be available for this species (Robinson et al., 2009). As for *Anisoneura aluco*, a previous report of the ‘polyphagous’ larva appears to be an erroneous misinterpretation (Holloway, 2005). Hence, subsequent opportunities to discover and confirm the respective larvae of both *Anisoneura* species would allow us to better understand their larval morphology at the generic and specific levels. Elucidation of their larval hostplant/s would also enable us to determine the relative dependence on our forests for their survival and reproduction.



Fig. 2. Dorsal view of a mating pair (male at right), perched on a broad leaf of *Clerodendrum villosum* (Lamiaceae), first encountered at ca. 2045 hours on 5 Dec.2009 at the Nee Soon Swamp Forest. (Photograph by: Tzi Ming Leong).



Fig. 3. Lateral view of mating moths (as in Fig. 2, facing male). (Photograph by: Tzi Ming Leong).



Fig. 4. Dorsal view of mating moths (as in Figs. 2, 3), photographed later at 2355 hours. Note change of position from the horizontal to a vertical alignment. The wingspan of the male (below) was ca. 60 mm, while that of the female (above) was ca. 70 mm. (Photograph by: Tzi Ming Leong).

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#### LITERATURE CITED

- Holloway, J. D., 2005. The moths of Borneo: Family Noctuidae, subfamily Catocalinae. *Malayan Nature Journal*, **58**(1–4): 1–529.
- Kononenko, V. S. & A. Pinratana, 2005. *Moths of Thailand: Volume 3—Noctuidae. Part 1: Subfamilies Herminiinae, Rivulinae, Hypeninae, Catocalinae, Aganainae, Eutelinae, Stictopterinae, Plusiinae, Pantheinae, Acronictinae and Agaristinae*. Brothers of Saint Gabriel in Thailand, Bangkok. 261 pp.
- Robinson, G. S., P. R. Ackery, I. J. Kitching, G. W. Beccaloni & L. M. Hernández, 2009. *HOSTS—A Database of the World's Lepidopteran Hostplants*. The Natural History Museum, London. <http://www.nhm.ac.uk/research-curation/research/projects/hostplants/>. (Accessed: 27 Dec.2009).



Fig. 5. Ventre-lateral view of mating moths (as in Fig. 4). Note presence of retinaculum (arrowed) at base of the forewing of male (below). (Photograph by: Tzi Ming Leong).