

Ladybird beetles on a rooftop garden at Yishun

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Subjects: *Brumoides* sp. (Insecta: Coleoptera: Coccinellidae) [Fig. 1];
Cheilomenes sexmaculata (Insecta: Coleoptera: Coccinellidae) [Fig. 2];
Chilocorus nigritus (Insecta: Coleoptera: Coccinellidae) [Fig. 3 & 4];
Chilocorus circumdatus (Insecta: Coleoptera: Coccinellidae) [Fig. 5];
Coelophora inaequalis (Insecta: Coleoptera: Coccinellidae) [Fig. 7-9];
Cryptolaemus sp. (Insecta: Coleoptera: Coccinellidae) [Fig. 6];
Henosepilachna vigintioctopunctata (Insecta: Coleoptera: Coccinellidae) [Fig. 10].

Subjects identified by: Marcus F. C. Ng & Sean Yap.

Location, date and time: Singapore Island, Yishun housing estate; October & December 2018.

Habitat: Urban. In garden at the seventh floor roof of a concrete high-rise building. The garden is planted with various ornamental plants such as *Ixora* and *Sphagneticola trilobata*, and edible plants such as basil, starfruit, pandan and lemongrass (*Cymbopogon citratus*). It was established around early 2017 and endured heavy pruning/mowing every 3 to 4 months.

Observer: Marcus F. C. Ng.

Observations: At least seven species of ladybird beetles (Coccinellidae) were regularly seen at the rooftop garden. The most abundant were the two species of *Chilocorus*, the black *Chilocorus nigritus* (Fig. 3 & 4) and the red *Chilocorus circumdatus* (Fig. 5). These were commonly found on lemongrass that was usually infested by an armoured scale insect (probably *Unaspis citri*, Insecta: Hemiptera: Diaspididae). The *Chilocorus* beetles seem to feed on these scale insects (see Fig. 3). The striped *Brumoides* sp. (Fig. 1) was also seen in the same microhabitat, but much less frequently, perhaps because of its small size. *Cheilomenes sexmaculata* (Fig. 2), with black zigzag markings, seems to prefer lawns with flowering grasses/sedges on which aphids gather to feed on the inflorescences. In December 2018, an example of *Cryptolaemus* sp. (Fig. 6) was photographed, as well as a number of the variable ladybird, *Coelophora inaequalis* (Fig. 7, 8, & 9). They were found on the lawns on grasses and sedges infested with aphids. The herbivorous and hairy *Henosepilachna vigintioctopunctata* (Fig. 10) was observed feeding on an unidentified shrub. Two beetles of the subfamily Epilachninae were also photographed (Fig. 11 & 12). Although they are similar in appearance to *Henosepilachna vigintioctopunctata*, it is unclear if they are conspecific.

Remarks: At least 16 species of ladybird beetles have been recorded from Singapore (Chua, 2011). While a few species, such as the *Henosepilachna* shown here, are herbivorous, most ladybirds are carnivorous and predatory. Adults and larvae of these beetles feed on small insects that include aphids, mealy bugs and scale insects. They help to control the damage caused by these notable plant pests in gardens such as the one featured here. The garden in turn serves as a 'refugia' for these ladybirds and other common urban insects in heavily built-up residential environments.

Reference: Chua, M. A. H., 2011. Ladybird beetles Family Coccinellidae. In: Ng, P. K. L., R. T. Corlett & H. T. W. Tan (eds.), 2011. *Singapore Biodiversity. An Encyclopedia of the Natural Environment and Sustainable Development*. Editions Didier Millet and The Raffles Museum of Biodiversity Research, National University of Singapore. p. 356.



Fig. 1. *Brumoides* sp.
dorso-lateral view.



Fig. 2. *Cheilomenes sexmaculata*
lateral view.



Fig. 3. *Chilocorus nigrinus*
feeding on scale insects.



Fig. 4. *Chilocorus nigrinus*
frontal view.



Fig. 5. *Chilocorus circumdatus*
frontal view.



Fig. 6. *Cryptolaemus* sp.
dorso-lateral view.



Fig. 7. *Coelophora inaequalis*
dorso-frontal view.



Fig. 8. *Coelophora inaequalis*
dorso-frontal view.



Fig. 9. *Coelophora inaequalis*
mating pair.



Fig. 10. *Henosepilachna*
vigintioctopunctata.



Fig. 11. Epilachnine 1
dorso-lateral view.



Fig. 12. Epilachnine 2
dorso-lateral view.

Photographs by Marcus F. C. Ng