NATURE IN SINGAPORE **18**: e2025072
Date of Publication: 31 July 2025
DOI: 10.26107/NIS-2025-0072

Biodiversity Record: *Syzigium aquem*, an additional host plant for the painted jezebel butterfly

Chin Yu Xun

Email: yuxun.sg@gmail.com

Recommended citation. Chin YX (2025) Biodiversity Record: *Syzigium aquem*, an additional host plant for the painted jezebel butterfly. Nature in Singapore, 18: e2025072. DOI: 10.26107/NIS-2025-0072

Subjects: Painted jezebel, *Delias hyparete metarete* (Insecta: Lepidoptera: Pieridae);
Water apple, *Syzygium aqueum* (Angiosperms: Myrtales: Myrtaceae).

Subjects identified by: Chin Yu Xun.

Location and dates: Singapore Island, Jurong West housing estate; 16–26 March 2025.

Habitat: Host plants in urban residential area among concrete high-rise buildings. Ex-situ observations conducted in a residential apartment.

Observer: Chin Yu Xun.

Observations: On 16 March at 1436 hrs, a painted jezebel was observed ovipositing on a leaf of a *Syzygium aqueum* (Fig. 1) about 2 m off the ground. Upon returning at 1931 hrs, the observer counted 12 eggs in a cluster on the underside of the same leaf (Fig. 2), and noted eight larvae on separate leaves of the same twig (Figs. 3, 4). Five larvae measured approximately 10 mm in length, while the remaining three were around 7 mm. Both the eggs and larvae were collected and housed in the observer's apartment for rearing. The leaf bearing the eggs was placed in a ventilated plastic container, while the twig with larvae was placed in a small flask filled with water to maintain leaf turgidity and freshness.

While in captivity, the larger larvae moulted on 17 and 19 March, while the smaller larvae moulted on 17 and 20 March. Moulting events were identified either by the presence of shed larval exuviae and head casts (Fig. 5), or through direct observation (Fig. 6). Fresh leaves were provided ad libitum after the original leaves were consumed. The larvae exhibited selective grazing, preferring young leaves, and began eating from the leaf tip (Fig. 7). Throughout the period of captivity, they were observed feeding continuously, even at midnight.

On 21 March, one larva drowned in the flask, while another died from unknown causes. As the remaining larvae ceased feeding on the provided leaves, three were released onto the original host plant while the other three were placed on a neighboring *Syzygium aqueum*. At the time of release, the larger larvae measured approximately 22 mm, while the smaller larvae measured 16 mm. On 22 March, the smaller larvae was confirmed to have moulted again based on the presence of shed larval exuviae. However, no pupation was observed, with the last recorded sighting of a larva on 25 March.

The eggs hatched after five days on 21 March, yielding small orange larvae with black heads, each measuring approximately 1.5 mm in length (Fig. 8). The newly hatched larvae were observed consuming part of their eggshells. On 22 March, they were released onto a water apple tree adjacent to the one on which they were originally found. They were monitored, and the number of larvae observed decreased over time, with the last sightings on 26 March.

Remarks: The painted jezebel is a common native butterfly in Singapore that is found in both urban and forested environments (Khew, 2015). In Singapore, its primary host plant is *Dendrophthoe pentandra*, a common mistletoe on various trees and shrubs in urban areas (Yong et al., 2015; Khew, 2015). Outside Singapore, other mistletoe hosts include *Dendrophthoe falcata*, *Dendrophthoe glabrescens*, *Macrosolen cochinchinensis*, *Scurrula ferruginea*, *Scurrula parasitica*, *Taxillus limprichtii*, and *Taxillus sutchuenensis* (see Hardy & Lawrence, 2017). The larvae are also known to feed on the leaves of fruit trees such as *Averrhoa bilimbi*, *Mangifera indica*, *Annona muricata*, *Nephelium lappaceum*, *Theobroma cacao*, and *Santalum album* (Igarashi & Fukuda, 1997; Robinson et al., 2001; Hardy & Lawrence, 2017). *Syzygium aqueum* is herein documented as an additional host plant for the painted jezebel.

Fig. 1. In-situ view of a female painted jezebel ovipositing on a leaf of *Syzygium aqueum*, observed on 16 March. Fig. 2. Ex-situ view of painted jezebel eggs on the underside of the leaf. (Photographs: Chin Yu Xun).

Fig. 3 & 4. Ex-situ view of the eight larvae found on separate leaves of the same twig where the eggs were oviposited. (Photographs: Chin Yu Xun).

Fig. 5. Captive larvae with shed exuviae and head casts, observed on 19 March 2025. Fig. 6. Lateral view of a moulting captive larva, observed on 20 March 2025. (Photographs: Chin Yu Xun).

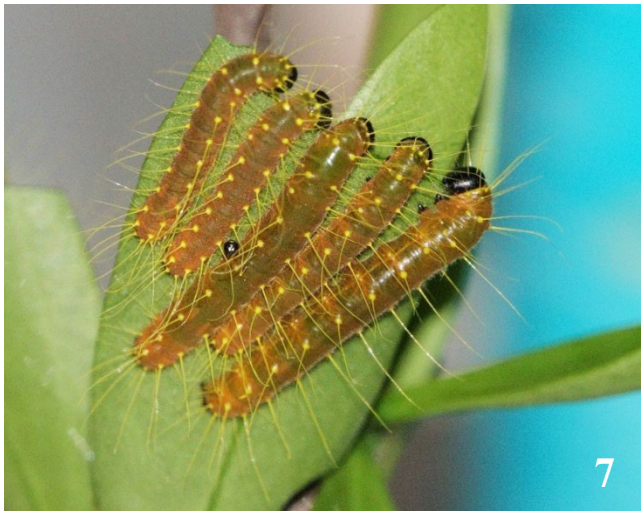

Fig. 7. Captive larvae in feeding from the tip of a leaf with approximately one-third of the leaf consumed, observed on 20 March 2025.
Fig. 8. Larvae newly hatched on 21 March 2025 under captive condition. (Photographs: Chin Yu Xun).

Based on size comparisons with individuals documented in previous life history studies of the painted jezebel, the larvae collected were likely in the second and third instar stages (Wee & Ng, 2008). The feeding behaviours observed, such as feeding times and direction, were consistent with earlier findings (Wee & Ng, 2008). The larvae's preference for young leaves may be attributed to their higher nutritional quality (Choong, 1996). However, the egg incubation period recorded in this observation was slightly longer than previously reported, with hatching occurring after five days, compared to the 2–4 days documented in other studies (Wee & Ng, 2008; Salaga et al., 2021).

The eventual disappearance of the larvae suggests that they may have been subject to predation. This risk could be heightened by their preference for young leaves, which are typically located at stem tips and are more exposed to potential predators (Heinrich, 1979; Schultz, 1983).

Literature cited:

Choong MF (1996) What makes a leaf tough and how this affects the pattern of *Castanopsis fissa* leaf consumption by caterpillars. Functional Ecology, 10: 668–674.

Hardy PB & Lawrence JM (2017) Field Guide to Butterflies of the Philippines. Siri Scientific Press, Castleton, 488 pp.

Heinrich B (1979) Foraging strategies of caterpillars: leaf damage and possible predator avoidance strategies. Oecologia, 42: 325–337.

Igarashi S & Fukuda H (1997) The Life Histories of Asian Butterflies. Tokai University Press, 550 pp.

Khew SK (2015) A Field Guide to the Butterflies of Singapore. Second Edition. Ink On Paper Communications Pte Ltd, Singapore, xxv + 375 pp.

Robinson GS, Ackery PR, Kitching IJ, Beccaloni GW & Hernández LM (2001) Hostplants of the Moth and Butterfly Caterpillars of the Oriental Region. Natural History Museum, London, 744 pp.

Salaga HS, Betalas M & Badon JAT (2021) Life history notes of the Painted Jezebel butterfly (*Delias hyparete mindanaensis*) from Malagos, Davao City, Philippines (Lepidoptera: Pieridae). News of the Lepidopterists' Society, 63: 103–105.

Schultz JC (1983) Habitat selection and foraging tactics of caterpillars in heterogeneous trees. In: Denno RF & McClure MS (eds.) Variable Plants and Herbivores in Natural and Managed Systems. Academic Press, New York, 61–86 pp.

Wee YC & Ng A (2008) Life History of the Painted Jezebel, *Delias hyparete* Linnaeus, 1758 (Order Lepidoptera). Nature in Singapore, 1: 103–108.

Yong JW, Wei JW, Khew JY, Rong SC & San WW (2015) A Guide to the Common Epiphytes and Mistletoes of Singapore. Cengage Learning Asia Singapore. 229 pp.