

AEGLE MARMELOS (RUTACEAE): A NEW LARVAL HOST PLANT FOR THE BLUE MORMON BUTTERFLY *PAPILIO POLYMNESTOR*

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The Bombay Natural History Society (BNHS) Nature Reserve is a forested area spread over 33 acres and is nestled between Dadasaheb Phalke Chitra Nagari (aka Film City) and Sanjay Gandhi National Park (SGNP) in Mumbai City of Maharashtra, India. The Reserve also has a small butterfly garden spread over an area of around quarter of an acre. The Blue Mormon *Papilio polymnestor* Cramer, 1775 (Insecta: Lepidoptera: Papilionidae) is a seen mostly during the monsoon in the forests of SGNP and BNHS Nature Reserve, Mumbai.

On 1.viii.2017, the authors saw a *P. polymnestor* laying eggs on the leaves of Wood Apple *Aegle marmelos* (Rutaceae), locally called Bel. As we tried to collect an egg, we found that a small parasitoid wasp was possibly laying eggs in it. We could not identify the wasp species as the photographs were not clear and it was too small for our photography equipment (see image). We successfully reared *P. polymnestor* caterpillars on the diet of *A. marmelos* leaves in September- October 2017, 2018 and 2019, but proper data was not maintained.

On 16.ix.2020, we saw a *P. polymnestor* laying eggs on a Limbu or Lemon *Citrus limon* plant and Bel *Aegle marmelos* tree. Again, on 20.ix.2020 we saw a *P. polymnestor* laying two eggs each on two Lemon species, viz., *Citrus limon* and Idilimbu *Citrus aurantifolia* and *Aegle marmelos* tree within a few minutes.

It laid one egg on one leaf and flew to another leaf. We could not manage to photograph eggs on the *A. marmelos* tree as the eggs were laid high up in the tree.

We searched for caterpillars and we found them on both *Citrus* species as well as on *A. marmelos* plants. We reared four caterpillars on a diet of *A. marmelos* leaves. All were observed feeding on the leaves and grew well. We cleaned the frass from the containers every day and added fresh *A. marmelos* leaves to the breeding box. On 25.ix.2020, we had four caterpillars of different sizes being reared.

The first one started pupating on 29.ix.2020 and a pupa was seen on 30.ix.2020. The pupa became black the next day. On 2.x.2020 it became blackish green, oozed liquid and broke. Parasitoids were seen in the container.

The second caterpillar was seen pupating on 30.ix.2020. A pupa was seen on the floor of the container the next day. On 12.x.2020, the pupa became green and black at 7 am. An adult emerged from the pupa at 10 am. Unfortunately, it did not eclose properly and had deformed wings.

The third caterpillar pupated on 9.x.2020. The pupa became creamy yellow on 10.x.2020 and was seen leaking the next day. Parasitoids were seen in the container on 11.x.2020.

The fourth caterpillar was found dead on 30.ix.2020 in the container. No parasitoids were seen. Nitin Kawthankar (*pers. comm.*) found two caterpillars of *P. polymnestor* on an

A. marmelos tree on 8.x.2019, at Pal village, Taluq Vengurla in Sindhurdurg district of Maharashtra. He observed the caterpillars again on 11.x.2019. He found a freshly eclosed *P. polymnestor* drying its wings on the same plant on 28.x.2019. He shared two images of the bird dropping stage and final instar with RK. The previously reported larval host plants of *P. polymnestor* were summarised by Robinson *et al.* (2010) and later Nitin *et al.* (2018) as *Garcinia xanthochymus* (Clusiaceae), *Atalantia racemosa*, *Atalantia wightii*, *Citrus maxima*, *Citrus limon*, *Glycosmis pentaphylla*, *Murraya koenigii*, *Paramignya monophylla* (Rutaceae). Regular egg laying, findings of caterpillars and its rearing on a diet of *Aegle marmelos* leaves till eclosion of the adult butterfly confirms *A. marmelos* to be a larval host plant for *P. polymnestor*.

Note on eggs laying

On 26.vii.2019, a *P. polymnestor* was seen laying eggs on a *Citrus limon* plant. It laid eggs on the underside of leaves, two eggs on the stem and one on a coir rope tied to the trunk of the same plant.

Note on parasitoids of *P. polymnestor*

A *P. polymnestor* was seen laying several eggs on the leaves of *Aegle marmelos* on 01.viii.2017. When the first author reached out to the egg, it was found that an unidentified

parasitoid wasp was perched next to it and possibly laying eggs in it. On 24.ix.2020, one egg was found infested with fungus. On 1.x.2020, five eggs of *P. polymnestor* were seen infested with fungus in the breeding box. We also found 5 eggs similarly parasitized on a *Citrus* plant. In the above rearing experience, two of the three pupae were killed by parasitoid wasps. But before the pupal stage, many eggs are parasitized by tiny wasps, killing them in the egg stage itself.

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Fig. 1: Parasitoid wasp on Blue Mormon Egg on Bel leaf



Fig. 2: Bird excreta mimicking stage of caterpillar



Fig.3: Caterpillar final instar



Fig.4: Caterpillar ready for pupation



Fig.5: Pupa



Fig.6: Freshly eclosed, deformed Blue Mormon

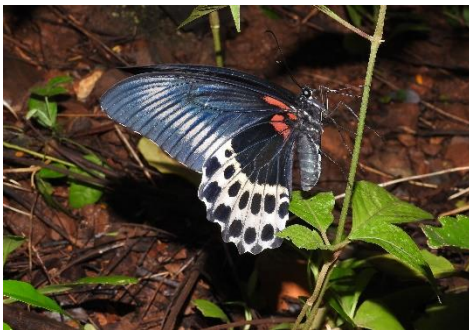


Fig.7: Freshly eclosed Blue Mormon seen in the Butterfly Garden



Fig.8: Parasitized Pupa



Fig.9 & 10: Parasitized Blue Mormon Egg