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ERANTHEMUM ROSEUM (ACANTHACEAE): A NEW LARVAL HOST PLANT FOR THE BLUE OAKLEAF BUTTERFLY *KALLIMA HORSFIELDII* KOLLAR, 1844 (LEPIDOPTERA)

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Reviewer: Peter Smetacek

Introduction

The Bombay Natural History Society 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 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 Southern Blue Oakleaf *Kallima horsfieldi* (Kollar, [1844]) (Lepidoptera: Nymphalidae) is a common butterfly species in the forests of SGNP and BNHS Nature Reserve, Mumbai.

Since August 2019, we have been seeing caterpillars of the *K. horsfieldii* on Blue Eranthemum *Eranthemum roseum* (Acanthaceae) locally called Jungli Aboli in the Reserve. The caterpillar can be differentiated from similar looking caterpillars of Pansies *Junonia* spp. The caterpillar has two horns on its black head and the spines have yellow bases which turn pink later as it grows (Bhakare & Ogale, 2018).

We reared some caterpillars in semitransparent plastic containers on a diet of leaves of this plant. Here are some dates and observations which prove that *K. horsfieldi* uses *E. roseum* as a larval host plant. On 26 August 2019, the authors saw a female *K. horsfieldi* laying eggs on *E. roseum*. One egg was collected and reared. Every day, the caterpillar was fed with fresh leaves of *E. roseum* till it pupated.

However, the life cycle was not documented properly.

A *K. horsfieldi* caterpillar was found on *E. roseum* on 17 September 2019, which was collected along with a stock of leaves and kept in a semi-transparent plastic container. A few leaves of the plant were eaten by the caterpillar leaving only the main vein and half of the leaves intact, showing its feeding pattern. It was fed with leaves of *E. roseum* and frass was cleaned from the container daily. On 28 September the caterpillar pupated (see images). An adult emerged on 8 October 2019 from the pupa. It flew away. On 2 October 2019, another caterpillar pupated on a stick put inside the container. This caterpillar was also raised on leaves of *E. roseum*. There was another pupa on the same stick which had pupated on 28 September 2019. On 7 October 2019, we had two pupae with us on the same stick. On 25 September 2019, a *K. horsfieldi* was seen laying eggs singly on the upper surface of *E. roseum* leaves and was photographed. One egg was collected and photographed using a macro lens (see image). A large caterpillar of *K. horsfieldi* was found on an *E. roseum* plant on 11 August 2020 which was collected and kept in a plastic container. The leaves of the plant were consumed, leaving the main vein intact. The caterpillar was fed with leaves of *E. roseum* and the container was cleaned of frass every

day. On 15 August 2020, the caterpillar took position for pupating under a leaf in the container. However, on 16 August 2020, it was found dead in the container in a half-pupated condition. Another large caterpillar of *K. horsfieldi* was found on an *E. roseum* plant on 22 August 2020 which was collected and kept in a plastic container. The caterpillar was fed with leaves of *E. roseum* and the container was cleaned of frass every day. The caterpillar pupated on 28 August 2020 on the underside of a leaf. The pupa became dark on 4 September 2020 and a butterfly eclosed on 5 September 2020 at 0945 hrs. It flew at around 1300 hrs. after drying its wings. Available scientific literature mentions *Pseuderanthemum malabaricum* (Wynter-Blyth, 1957; Robinson *et al.*, 2010), *Lepidagathis cuspidata* (Wynter-Blyth, 1957), *Strobilanthes callosus* (Wynter-Blyth, 1957; Robinson *et al.*, 2010) as larval host plants of *K. horsfieldi*. These are summarized by (Nitin *et al.*, 2018). It is evident that *E. roseum* has never been reported as a larval host of *K. horsfieldi*. Regular findings of eggs and caterpillars on *E. roseum* and its rearing on a diet of *E. roseum* leaves till eclosion of the adult butterfly unequivocally confirms *E. roseum* to be a native larval host plant for *K. horsfieldi*.

Note on parasitizing by a fly species

A pupa of *K. horsfieldi* was seen on the main stem of *E. roseum* on 2 August 2020. It was collected along with the branch and kept in a semi-transparent plastic container under observation. But on 6 August 2020 three small pupae of an unidentified fly (see image) were

found in the container. On further observation, the butterfly pupa was found to be broken and empty. The three pupae were kept in the container and observed. On 14 August 2020, a fly emerged from one pupa (see image). The next day, another similar fly emerged from the second pupa. Both flew away after drying their wings. Nothing emerged from the third pupa and possibly it was dead.

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Fig.1: *K. horsfieldii* laying egg on *Eranthemum roseum*



Fig.2: *K. horsfieldii* egg on *Eranthemum roseum*



Fig.3: *K. horsfieldii* caterpillar



Fig.4: *K. horsfieldii* pupa



Fig.5: Freshly eclosed *K. horsfieldii*



Fig.6: Empty pupa of Blue Oakleaf and parasitic pupae of unidentified fly



Fig.7: Unidentified Fly emerged from the parasitic pupa