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RE-APPEARANCE OF THE RED BREAST JEZABEL *DELIAS ACALIS* (GODART, 1819) (LEPIDOPTERA: PIERIDAE) IN THE KUMAON HIMALAYA

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The Himalayan distribution of the Red Breast Jezabel *Delias acalis* (Godart, 1819) was clarified when Smetacek (2001) reported the species from Nainital district in the Kumaon Himalaya, Uttarakhand for the first time since regular records began there in 1947. Prior to this, Evans (1932) gave a distribution of Shimla (Himachal Pradesh) to Burma (Myanmar) for the species, although Wynter-Blyth (1957) questioned the Shimla record and gave a distribution of Nepal eastwards for the species.

Smetacek (2001), on the basis of specimens collected or observed between 1997 and 1999 in Nainital district, speculated that the species contracted and expanded its distribution along the base of the western Himalaya and had probably reached Shimla during the course of one such expansion. Smetacek (*pers. comm.*) did not record the species since its last report in 1999.

On 11 March, 2019, a male Red Breast Jezabel was observed on a flowering buddleia bush outside the Butterfly Research Centre (1500 m), Bhimtal in Nainital district, one of the sites where it had

previously been observed during the 1990s. On 22 March, two males visited the site and on 3 April 2019, a female visited the site. These were distinguishable because they had different parts of their wing missing, so it was clearly not a single specimen repeatedly visiting the site.

The present records were after a gap of 20 years. Although the first quarter of 2019 was notable for being unusually wet and cold, with snowfall on the surrounding hills as late as 28 February, it did not affect the quantity of butterflies in the spring brood, which, though emergence was late, were prolific.

Smetacek (2001) reported this species from Nainital district in the months of March, April, November and December. This suggests that there are at least two annual broods in the area during periods when this butterfly has colonised the area. In other parts of its range, there are three generations, the third being a monsoon brood observed by Bailey (1951) in Nepal.

It is interesting that Smetacek (2001) noted that this species has not been recorded in the western

Himalaya for over 50 years prior to 1997, yet its next appearance was only 20 years after the last sighting in 1999.

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BIOEFFICACY OF SOME GREEN PESTICIDES TOWARDS THEIR OVICIDAL ACTION AGAINST EGGS OF *TETRANYCHUS AFRINDICUS* NASSAR & GHAI (ACARI: TETRANYCHIDAE) INFESTING *ADHATODA VASICA* UNDER LABORATORY CONDITION

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Abstract

The mite species *Tetranychus afrindicus* Nassar & Ghai, 1981 was found to be a new pest of Vasak (*Adhatoda vasica* L) in the Medicinal Plant Garden of R.K Mission, Narendrapur, Kolkata, West Bengal and a laboratory experiment was conducted to assess the ovicidal action of some of the botanical pesticides (leaf extracts of *Santalum album* L, *Datura metel* L, *Calotropis gigantea*

(L), *Saraca asoca* (Roxb.). The results indicate that leaf extract of *Santalum album* was found to be the best registering mean ovicidal action of 36.13% at 3% concentration and 22.47% at 5% concentration while the corresponding values of *Saraca asoca* was 61.85% at 3% and 53.24 at 5% concentrations. Leaf extract of *Datura metel* was found to be the second best at both the concentrations.