



## *Ypthima kedarnathensis* Singh, 2007 (Lepidoptera: Nymphalidae: Satyrinae) from the Kumaon Himalaya, India

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The description of the butterfly *Ypthima kedarnathensis* Singh, 2007 was based on three specimens taken in the Kedarnath Musk Deer Reserve, Garhwal, Uttarakhand from two localities within 10km of each other. It belongs to the *Y. sakra* Moore group of the genus and is distinguished from the sympatric *Y. nikaia* Moore mainly by the additional ocellus on the hind wing between veins 4 and 5, which is conjoined to the large ocellus in space 5 on the verso surface and is clearly marked on the recto surface.

The Lepidoptera of Nainital District, mainly Nainital Town and the Bhimtal Valley, have been surveyed for over half a century. In 2007 and 2009, Lepidoptera of the southern face of the Gagar range were surveyed, mainly at 29°26'4"N & 79°35'40"E. Among other Lepidoptera, several specimens of the *Y. sakra* group were recorded. Critical examination of these and other specimens recorded locally resulted in the following diagnoses.

### Material and Methods

A series of 27 specimens of the *Ypthima sakra* group in the author's personal collection was examined. The

individuals comprising this series were collected over the past 37 years in Nainital District of Uttarakhand, India (Image 1). A single specimen was taken in Almora District. They were identified as:

*Ypthima nikaia* Moore: 23 exs.: Forewing length: 22-25 mm. Expanse (forewing tip to centre of thorax x 2) = 48-54 mm. Coll. et det. Peter Smetacek.

(a) Bhimtal, 29°21'17"N & 79°32'34"E, 1500m, Nainital District, Kumaon, Uttarakhand: 26.viii.1973 (Ynikaea1), 21.vi.1974 (Ynikaea3), 21.v.1975 (Ynikaea4), 23.v.1975 (Ynikaea5), 05.ix.1975 (Ynikaea6), 16.v.1976 (Ynikaea7), 13.x.1976 (Ynikaea8), 16.v.1982 x 3 (Ynikaea9-11), 12.ix.1983 (Ynikaea12), 08.viii.1991 (Ynikaea13), 29.v.1994 (Ynikaea14), 30.v.1994 x 2 (Ynikaea21-22), 12.vi.1994 (Ynikaea23); (b) Sattal, 29°21'09"N & 79°31'67"E, 1200m, Nainital District, Kumaon, Uttarakhand 05.vi.1974 (Ynikaea2); (c) Below Gagar Pass, Maheshkhan, 29°24'46"N & 79°32'39"E, 2200m, Nainital District, Kumaon, Uttarakhand 29.v.1994 x 6 (Ynikaea15-20); (d) Kukuchhina, 29°50'24"N & 79°27'13"E, 2200m, Almora District, Kumaon, Uttarakhand 6.vi.2010 (Ynikaea24).

*Ypthima kedarnathensis* Singh (Images 2 & 3): 1 ex.: Forewing length: 23mm. Expanse (forewing tip to centre of thorax x 2) = 50mm. Leg., coll. et det. Peter Smetacek.

Below Gagar Pass, Maheshkhan 2200m Nainital District, Kumaon, Uttarakhand, 29.v.1994 (Ykedarnathensis1).

Three individuals from Bhimtal could not be placed.

### Discussion

Although *Y. kedarnathensis* was described on the basis of wing pattern, which is notoriously variable in this sub-family, subsequent comparisons of male genitalia of *Y. sakra sakra*, *Y. nikaia* and a paratype of *Y. kedarnathensis* confirm that *Y. kedarnathensis* is indeed specifically different from the two former species (unpublished data).

The present record of *Y. kedarnathensis* constitutes an eastward extension to the known distribution of the species. Of interest is the fact that it has not been recorded from below 1600m, where butterflies have been recorded over a period of more than 40 years. It therefore appears to be restricted to the region above 1600m. Like the type locality, the present locality also has dense subtropical broadleaf forest with *Quercus leucotrichophora* A. Camus (Fagaceae) and *Rhododendron arboreum* Smith (Ericaceae) as dominant species. Singh (2007) recorded his specimens between 1600 and 1800 m. The present record from 2200m also constitutes an extension to the known altitudinal distribution of this species.

Singh (2007) mentioned a wingspan of 40-45 mm for the type material of *Y. kedarnathensis*. The present

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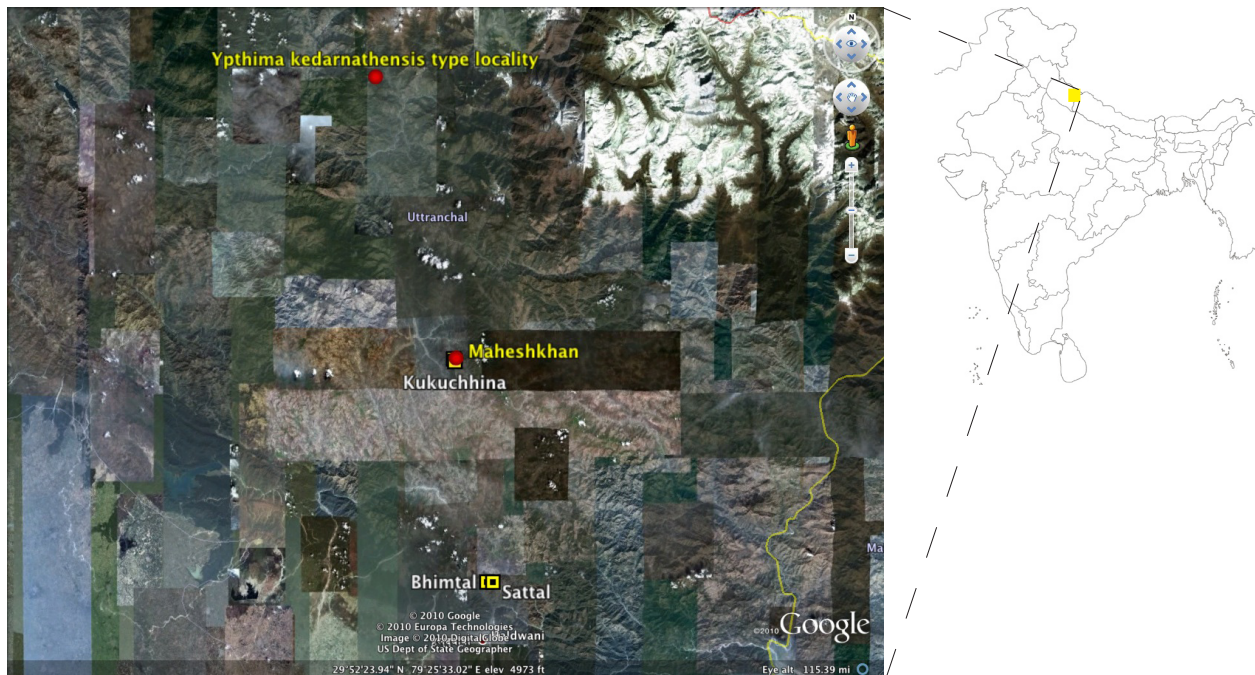
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**Image 1.** Localities indicating the known distributions of *Ypthima kedarnathensis* (red dots) and *Y. nikaea* (yellow squares). Both the species were collected from Maheshkhan.



**Image 2.** *Ypthima kedarnathensis* A.P. Singh verso. Below Gagar Pass, Maheshkhan 2200m, Nainital District, Uttarakhand (29.v.1994).



**Image 3.** *Ypthima kedarnathensis* A.P. Singh recto. Below Gagar Pass, Maheshkhan 2200m, Nainital District, Uttarakhand (29.v.1994).

specimen has an expanse of 50mm but this is probably because of difference in measurements, in that the type material was measured directly from forewing tip to forewing tip (A.P. Singh pers. comm.) while the specimen examined in the present study was measured from the forewing tip to the centre of the thorax and the resulting figure doubled.

For *Y. nikaea*, Evans (1932) gives an expanse of 45-50 mm. Some specimens examined in the present study are larger than this, with an expanse up to 54mm.

The altitudinal distribution of *Y. nikaea* in the Kumaon

Himalaya extends from 1200m to at least 2200m and probably higher. I have seen them on Gagar Pass (2400m) but do not have a specimen to support the observation.

#### REFERENCE

**Singh, A.P. (2007).** A new butterfly species of the genus *Ypthima* Hübner (Nymphalidae: Satyrinae) from Garhwal Himalaya, India. *Journal of the Bombay Natural History Society* 104(2): 191-194.

