

32. THE INDIAN FRITILLARY (*ARGYREUS HYPERBIUS* L.) IN THE CHAMBAL AREA OF MADHYA PRADESH AND RAJASTHAN (LEPIDOPTERA: NYMPHALIDAE)

INTRODUCTION

The Indian Fritillary (*Argyreus hyperbius* Linné) is the only member of its genus, which is closely allied to the genus *Argynnis* and its close relatives, all of which are purely Palaearctic. It has a solid distribution from the western Himalaya to China and Japan. Though mainly linked to temperate zone habitats, the species breeds at lower levels than members of related genera.

Contrary to related genera (except for a few members of the genus *Issoria* in highland East Africa) *A. hyperbius* is present in the montane areas of the tropical zone. In India it is found on the highest mountains of South India, at Pachmarhi in Madhya Pradesh, on Mt. Abu in Rajasthan and Sri Lanka. It is found in the highlands of Malaysia where, according to Eliot (1978), it has recently established itself in habitats modified by man, but it is common in highland Sumatra. It is also found in montane New Guinea and in Queensland, Australia. This type of distribution of a Palaearctic species is highly unusual in itself, but the presence of a distinct subspecies also in the highlands of Ethiopia makes the butterfly, I think, biogeographically unique. Each of the geographical isolates have been described as separate subspecies, but they are not very distinct from each other.

LOW LEVEL OBSERVATIONS OF *A. hyperbius*

Despite its Palaearctic origins and its essentially temperate habitat choice, there are scattered records of this butterfly from the plains: Delhi, Lucknow, Bombay, Saurashtra, and near Patna. In April, 1985 I collected a small series in the Himalayan foothills near Ramnagar,

U.P. Most of the plains specimens have been taken during the winter months, and the general impression is that they move down to the plains in autumn instead of hibernating in the mountains. This is the case for a small group of Palaearctic butterflies described by Larsen (1986). The normal food plant for the species and its related genera is *Viola*, and the weed *Viola tricolor* is found in gardens and fields on the plains. There is one record from the plains during the summer months. I collected several specimens of both sexes in Jor Bagh Colony, New Delhi, in July, 1961, descendants of those recorded by Bent Bogh Andersen in March of the same year. It must be emphasised, however, that the total number of low level observations of this butterfly are few.

OBSERVATIONS ON THE CHAMBAL

On 22.xii.1985 I stopped briefly in the ravines of the Chambal River, where the main Gwalior-Agra road crosses the river. I saw at least six males of *A. hyperbius* and resolved to plan my return journey in such a way as to look further into the matter. On 27.xii.1985 I checked the ravines to a depth of 500 m on either side of the river. The butterfly was everywhere plentiful, and several specimens were met with that had limp wings, indicating that they had only just hatched. They were definitely breeding, but only in the dacoit infested ravines. Spot checks in agricultural-lands nearby yielded no specimens. The only previous record that I have traced of low level breeding is that of de Rhé Philippe (1902) who found larvae on potted violets and *Lobelia* in Lucknow. The latter is not normally used by the genus or its relatives. There were

no likely food plant candidates in the Chambal area.

The Chambal habitat, to my mind, is a most surprising one for the species. The ravines have summer temperatures in excess of 45° Centigrade, are very dry, and contain a basically xerophillous vegetation dominated by *Capparis aphylla*. Thousands of *Anaphaeis aurota* F. were hatching in the area at the time. All other butterflies present were typical of arid tropical lands in Asia, and in some cases also Africa. The presence of *A. argyreus* in large numbers was highly anomalous. But there they were, and they must have had an alternative, unrecorded food plant.

Discussion

A. hyperbius definitely cannot permanently

survive on the plains of India, and the July records from Delhi in 1961 must be exceptional. A revisit to the locality on 1.iv.1986 yielded no specimens. Confirmation of this was found in the Nilgiri Mountains of South India where I reared some 100 pupae in Kotagiri (1900 m) with very little mortality. Of the pupae obtained, eighty hatched in Kotagiri without incident, while most of twenty hatching at Mettupalayam on the plains were crippled, apparently because temperatures reached very high levels at the time.

The ability of *A. hyperbius* to breed at low altitudes during cool weather is probably a factor in its wide distribution in the montane zones of the Asian tropics. More information on its migrations and survival on the plains would be of great interest.

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33. REVISED NOMENCLATURE FOR SOME BUTTERFLIES OF THE INDIAN REGION

Subsequent to my contributions on the nomenclature of Indian butterflies (Varshney 1980, 1985), two significant publications from the British Museum (Nat. Hist.) have appeared, which have changed the names of butterflies in two families considerably. These changes involve a number of species occurring in the

Indian region. Hence this note is put up to update our information on these taxa.

Family DANAIDAE

Ackery & Vane-Wright (1984) have revised the world fauna of milkweed butterflies (Sub-



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