

## First report of Grey Pansy, *Junonia atlites*, Linnaeus, (Lepidoptera: Nymphalidae) from semi-arid region of Kalaburagi division, Karnataka, India

Kavya K Saraf, Murali Jadesh V

Department of P.G. Studies and Research in Zoology, Gulabarga University, Kalaburagi, Karnataka India

### Abstract

Grey Pansy is the least found pansy in India and it is endemic to the heavy rain fall regions, wherein, Kalaburagi division comes under the semi-arid regions of India. In this current paper we are reporting the presence of Grey pansy from Uploan nature camp and Shahapur hills of Kalaburagi division. Butterfly has been captured, preserved, photographed and identified; this is the first reporting of Grey Pansy from arid region, till date this butterfly has not been reported from arid regions of India so far. Further, long term monitoring is necessary to understand and reveal the ecology and distribution of the Grey Pansy in semi-arid region.

**Keywords:** grey pansy, semi-arid, Uploan, distribution of grey pansy

### 1. Introduction

Venkataramani (1986) <sup>[1]</sup> described India as a “butterfly paradise”, butterflies are one of the best studied taxonomical group among the class Insecta (Robbins). Butterflies occur in many habitats, ranging from disturbed to pristine area. (Thomas, 1991; Kremem *et al.* 1993; Brown, 1996; Brown and Hutchings, 1997) <sup>[2-5]</sup>. Many species are strictly seasonal, preferring only a particular set of habitats, adult butterflies and their caterpillars are dependent on specific host plants for food, thus the diversity of butterflies indirectly reflects plant diversity of the given area (Chakravarthy *et al.* 1997 <sup>[6]</sup> and Padhye *et al.* 2006). Grey Pansy, *Junonia atlites* (Linnaeus, 1763) belonging to the family Nymphalidae of Super family Papilionoidea of class Insecta, found in India, Sri Lanka, Myanmar, Nepal, Bangladesh, Bhutan, Pakistan, Afghanistan, Arabia, Thailand, China, Hong Kong, Laos and Vietnam. According to the authors of field guides Kehimkar, (2016) <sup>[3]</sup> Gunathilagaraj (2015) <sup>[8]</sup> *et al.* Grey Pansy is least common Pansy in India and found only in regions of heavy rainfall and never found in dry regions. Till date this butterfly has not been reported from dry areas.

### 2. Observation

While studying the ecological aspects of butterflies of Kalaburagi District at my research area, Uploan nature camp of geographical coordination 17° 23'40.5" N and 76° 52' 28.8" E, of survey number 16, my attention was caught by a butterfly hovering over Lantana flower, immediately it was photographed and sketched in the field book. Identification of butterfly was done with the help of field guides. The first sighting was made on 8/11/2015 at 08:30 am; the second sighting was made on 20/12/2015 at 09:15 am in the same research area basking on a rock. I examined for the Grey pansy of my every visit after these two sightings but it was not observed. Further, in 2016, on 1/11/2016 at 1:15pm when I was returning from the study area once again I observed but I could not able to photograph it, the fourth observation was

near the small artificial water pond in the research area for birds and other small animals on 25/12/2016 at 7:30 am.

As Grey Pansy, *Junonia atlites* was not supposed to be a dry region butterfly; it took some time to make final conclusion and add in the checklist of butterflies had been preparing for Uploan nature camp, Kalaburagi district; and list was prepared without adding the Grey Pansy. Further the visit made to observe museum collection of butterflies at the Department of Agricultural Entomology, College of Agriculture, Bheemaranagudi Karnataka, India on 13/4/2017 which also comes under dry regions of Kalaburagi Districts, their collection of Nymphalids includes two specimens of Grey Pansy, which were collected from Shahapur hills. Then I assured that the occurrence of Grey Pansy in the Kalaburagi division. Apart from the fact that the Grey Pansy found only in the heavy rainfall regions and never in dry regions, our records constitute the first report of Grey Pansy occurring in dry region.

### 3. Material and methods

We have not followed any butterfly monitoring methods opportunistically I observed this butterfly in my research station Uploan Nature Camp, Kalaburagi District, Karnataka. Butterfly had been photographed and indentified by using field guides (BNHS Field Guides, Butterflies of India by Kehimkar, South Indian Butterflies by Gunathilagaraj *et al.* and. Chittegalu by Kishandas), and confirmed by comparing photographs with the specimen at Insect museum Department of Agricultural Entomology, College of Agriculture, Bheemaranagudi Karnataka, India.

#### 3.2 Study area

##### Uploan Nature Camp, Kalaburagi District Karnataka

Kalaburagi is located in the Northeast of Karnataka. The district is spread across 7 Talukas – Afzalpur, Aland, Chincholi, Chittapur, Kalaburagi, Jewargi and Sedum. Uploan Nature Camp lies on the geographical coordinates of 17°

23°40.5'N and 76° 52' 28.8'' E, situated about 13 km away from Kalaburagi Central bus stand, of survey number 16, with a geographical area 18.88 Hectare. Kalaburagi district has a semi-arid type of climate. During peak summer maximum temperature reaches 45°C and December is the coldest month with minimum temperature 20 to 10°C, Average rain fall 1-839mm.

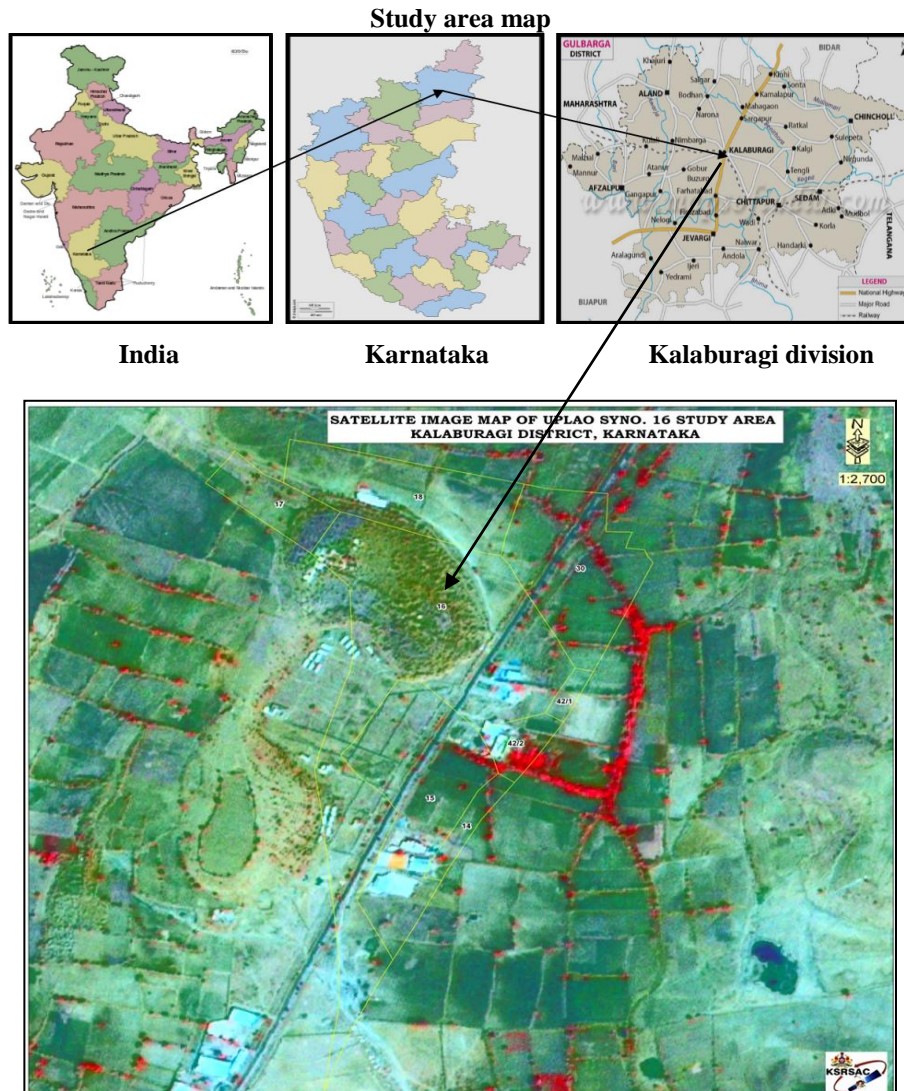
**Distribution of Grey Pansy**

In India Grey Pansy found in, Maharashtra, Madhya Pradesh, Kerala, Paschimbangal, Telangana, Andhra Pradesh, Meghalaya, Andaman and Nicobar Islands, Assam, Odisha, Tripura, Chhattisgarh, Manipur, Karnataka states. In Karnataka it is reported from Kodagu District, Bangalore urban District, Bangalore Rural District Dakshina Kannada District, Mandya District, Hassan District, Chikkamagaluru District, Shivamogga District, found especially during the months of May, August, September, November, December and January. (www.ifoundbutterflies.org) According to these reports it is clear that Grey pansy has been reported only from heavy rain fall regions, till date this species has not been reported from dry regions of India. This is the first report of

Grey Pansy from semi-arid region (Kalaburagi Division – Uplon and Shahapur hills) of India.



**Fig 1:** Grey Pansy, From Uplon Nature Camp, Kalaburagi District Karnataka



**Fig 2:** Uplon nature camp Kalaburagi

#### 4. Conclusion

Further long term monitoring is necessary to reveal distribution, host plant and habitat preference, seasonal variation, life cycle study of Grey Pansy.

This report is an example that semi-arid region is also rich in biodiversity; detailed surveys, economic support for the study, conservation programme, awareness about flora and fauna of this region is very much needed. Whenever we talk about biodiversity either it may be flora or fauna our focus shift immediately to Western Ghats, Eastern Ghats or in general to heavy rain fall regions and all the NGO's, Government funding agencies are easily releases the funds and supports study and research that are being carried out in these regions, in this context the dry regions are very neglected habitat, occasionally the reports are indicating the importance of such dry habitats by reporting new species, endangered species from dry habitats. The extensive survey of fauna is strongly recommended, as this is the basic for all the further research and conservation plans. Butterfly fauna of semi-arid region of Karnataka remains poorly documented, specially the hottest Kalaburagi division, it is necessary to study and survey the biodiversity of this region and generate the baseline data of butterfly is very necessary and helps to formulate conservation plans for species and dry habitat.

#### 5. Acknowledgement

1. I am grateful to my research supervisor, Dr Murali Jadesh for his support.
2. I heartily thank Sammilan Shetty, the Butterfly Conservator, Belvai, Dakshin Kannda, Karnataka, India for creating awareness about butterfly and pushed me to work.
3. I am thankful to Kishandas KR, Isaac Kehimkar for support and their help.
4. I am thankful to Shankara Murthy M, Department of Agricultural Entomology, College of Agriculture, Bheemarayanagudi Karnataka, India, for his kind and immediate positive response when I asked for identification of butterfly.
5. I would like to express my deepest gratitude to Dr.Rahavenrda Kulkarni for caring throughout these years.
6. I would also thank Dr.Renuka Khaple and Dr. Sharanbassappa A Patil for being my spirit and positive driving force.
7. Satellite image of study area, Uploan was prepared by Remote sensing Department, Gulbarga University, Kalaburagi. I am thankful to Chairman Rajanna A.G.and Technical Assistant Mallappa for their kind and immediate response for my need of satellite image.
8. My work was financed by Kalaburagi University, Kalaburagi Karnataka, India.

#### 6. References

1. Venkataramani G. In the shadow of extinction, In, Frontline, India s National Magazine. 1986; 8(3):58.
2. Robbins RK, Opler PA. Butterfly constraints of taxonomic affiliation, butterfly and diversity and a preliminary comparison with bird and nectar flower morphology, J Nat his, 1997; 13/14:855-884.
3. Thomas CD. Habitat use and geographical ranges of butterflies from the wet lowlands of Costa Rica. *Biological Conservation*. 1991; 55:269-281.
4. Kremen C, Colwell RK, Erwin TL, Mnrphy DD, Noss Rf, Sanjayan MA. Terrestrial arthropod assemblages: their use in conservation planning. *Conservation Biology*, 1993; 7:796-808.
5. Brown KS, 1996. Conservation of threatened species of Brazilian butterflies. *Proceedings International symposium on Butterfly Conservation Osaka, Decline and Conservation of Butterflies in Japan III*, 1996, 45-62.
6. Chakravarthy AK, Rajagopal D, Jagantha R. Insect as bio indicators of conservation in the tropics. *Zoo's Print Journal*. 1997; 12:21-25.
7. Isaac K. BNHS Field guides, Butterflies of India. Edn 1, Bombay Natural History Society, Hornbill House, and Mumbai. 2016; 1:509.
8. Gunnathilagaraj K, Perumal TNA, Jayaram K, Ganesh Kumar. *Field Guide: South Indian Butterflies*, first edition, published by Krab Media and Marketing Bangalore India, 2015, 359.
9. Kishandas KR. Chittegalu. First edition, Published by Arivu education and cultural trust Mysore, India, 2009, 136.
10. Kalaburagi District Profile Government of Karnataka: the knowledge hub Asia.
11. Retrieved from, [https://en.wikipedia.org/wiki/List\\_of\\_districts\\_of\\_Karnataka](https://en.wikipedia.org/wiki/List_of_districts_of_Karnataka), Assessed on 6/9/2017 at, 1:8 pm.
12. Retrieved from, [https://en.wikipedia.org/wiki/Kalaburagi\\_division](https://en.wikipedia.org/wiki/Kalaburagi_division), Assessed on 6/9/2017 at 1:10 pm.
13. Retrieved from, [https://en.wikipedia.org/wiki/Yadgir\\_district](https://en.wikipedia.org/wiki/Yadgir_district), Assessed on 6/9/2017 at 1:11 pm.
14. Retrieved from, <https://en.wikipedia.org/wiki/Shahpur>, Assessed on Karnataka, 6/9/2017 at 1:15 pm
15. Hyderabad Karnataka area development board. Dev, Vanu Karnataka wins 4-decade-old battle; gets special status for Hyderabad-Karnataka region. *India Today*, 2009-2012.
16. Hyderabad-Karnataka special status will be Congress poll plank. *Times of India*, 2013.
17. Bill giving special status for Hyderabad-Karnataka region raises Telangana hopes. *Times of India*. 2012.
18. Manual for drought management National Institute of Disaster Management, Ministry of Agriculture, 2009.
19. Jain SK, Agarwal PK, Singh VP. *Hydrology and water resources in India*. Springer, 2007, 1303.
20. Nagaraja BC, Somasekhar RK, Kavitha A. Impact of drought on agriculture. Challenges facing poor farmers of Karnataka. South India. Paper presented at conference on climate change and security. Trondheim. Norway, 2011. 21-24.
21. Analysis of Rainfall in Assessing the Drought in Semi-arid Region of Karnataka State, India V. Jayasree B. Venkatesh, Springer Science Business Media Dordrecht 2015, *Water Resource Manage*, DOI 10.1007/s11269-015-1137-1. 2015; 29:5613-5630
22. Retrieved from, [Ced.org.in/docs/inec/arid-booklet/Arid-3-Arids-pdf](http://ced.org.in/docs/inec/arid-booklet/Arid-3-Arids-pdf), Assessed on 6/11/2017 at 01:12 pm.
23. Retrieved from, <http://www.google.co.in/semi+arid+region+of+karnataka> and source, Retrieved on Assessed on 6/11/2017 at 01:16 pm.